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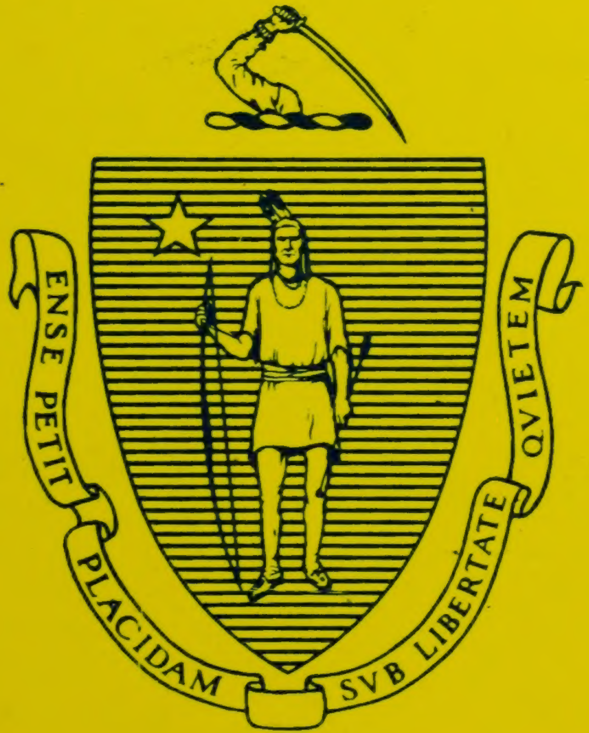
Commonwealth of Massachusetts

COMPREHENSIVE

EMERGENCY RESPONSE PLAN



CIVIL DEFENSE AGENCY
AND
OFFICE OF EMERGENCY PREPAREDNESS

GOVERNMENT DOCUMENTS
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MASSACHUSETTS CIVIL DEFENSE AGENCY
AND OFFICE OF EMERGENCY PREPAREDNESS
400 Worcester Road Framingham, Mass. 01701

To: HOLDERS OF THE MASSACHUSETTS COMPREHENSIVE EMERGENCY RESPONSE PLAN

From: DISASTER PREPAREDNESS PROGRAM

The attached copy of the Massachusetts Comprehensive Emergency Response Plan has been assigned to your Office.

Please note that you are responsible for maintaining copy number 72 of this Plan.

Revisions to this Plan will be issued periodically by the Disaster Preparedness Program. You are responsible for seeing that you copy of the Plan is updated.

* * * * *

GOVERNMENT DOCUMENTS
COLLECTION
MAR 29 1983
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MASSACHUSETTS CIVIL DEFENSE AGENCY
AND OFFICE OF EMERGENCY PREPAREDNESS
400 Worcester Road Framingham, Mass. 01701

INSTRUCTIONS

ASSEMBLING STATE COMPREHENSIVE EMERGENCY RESPONSE PLAN

The following pages should be placed before the first tab entitled "Part One: State and Local Response":

Title Page
Definitions (pp i-ii)
Mass. Emergency Operations
Table of Contents (3 pp)

Below is a list of the tabs to the State Plan. Place the pages listed in the right hand column behind the corresponding tab in the left hand column.

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(Green Tabs Begin)

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(Clear Tab)	
Appendices	No Text

NOTE: If you are missing any tabs/pages or have extra copies of any tabs/pages, please notify the Office from which you received your Plan.

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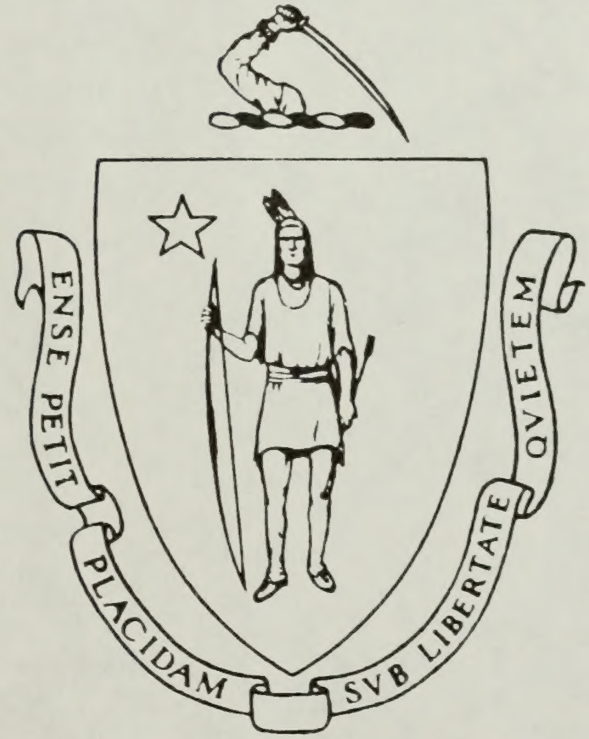
Commonwealth Of Massachusetts

Civil Defense Agency and Office of Emergency Preparedness

COMPREHENSIVE EMERGENCY RESPONSE PLAN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MICHAEL S. DUKAKIS

Governor

CHARLES V. BARRY

Secretary of Public Safety

ROBERT J. BOULAY

Director

Record of Changes and Corrections

Change Number	Date of Change	Date Entered	Signature of Person Entering Change
Rev. 1	June 15, 1984	7.13.84	

DEFINITIONS

Natural Disaster -- any hurricane, tornado, storm, flood, high water, wind driven water, tidal wave, tsunami, earthquake, landslide, mudslide, snowstorm, drought, fire, explosion, or other catastrophe resulting in damage, hardship, suffering or possible loss of life.

Emergency -- any hurricane, tornado, storm, flood, high water, wind driven water, tidal wave, tsunami, earthquake, volcanic explosion, or other catastrophe which requires Federal emergency assistance to supplement State and local efforts to save lives and protect property, public health and safety, or to avert or lessen the threat of a major disaster.

Major Disaster -- any hurricane, tornado, storm, flood, high water, wind driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, drought, fire, explosion, or other catastrophe which, in the determination of the President, caused damage of sufficient severity and magnitude to warrant major disaster assistance under Public Law 93-288, above and beyond emergency services by the Federal government, to supplement the efforts and available resources of the State, local governments, and disaster relief organizations in alleviating damage, loss, hardship or suffering.

Emergency Operating Center (EOC)--a facility with the necessary communications where State government officials can exercise direction and control of forces and resources to provide essential emergency functions.

State of Emergency -- a proclamation, issued by the Governor under the Civil Defense Act of 1950, as amended, (Chapter 639) following which certain extraordinary powers may be exercised by the Governor to protect the public peace, health, security and safety, and to preserve the lives and property of the people of the Commonwealth.

Disaster Assistance Center (DAC) -- a one-stop facility in or near a disaster area, staffed by representatives of various local, State and/or Federal agencies, and private relief organizations.

Federal Emergency Management Agency (FEMA) -- agency responsible for coordinating Federal disaster assistance operations in a Presidentially declared disaster. 1

Federal Coordinating Officer (FCO) --- person appointed by the Director, FEMA, to coordinate Federal assistance in an Emergency or Major Disaster.

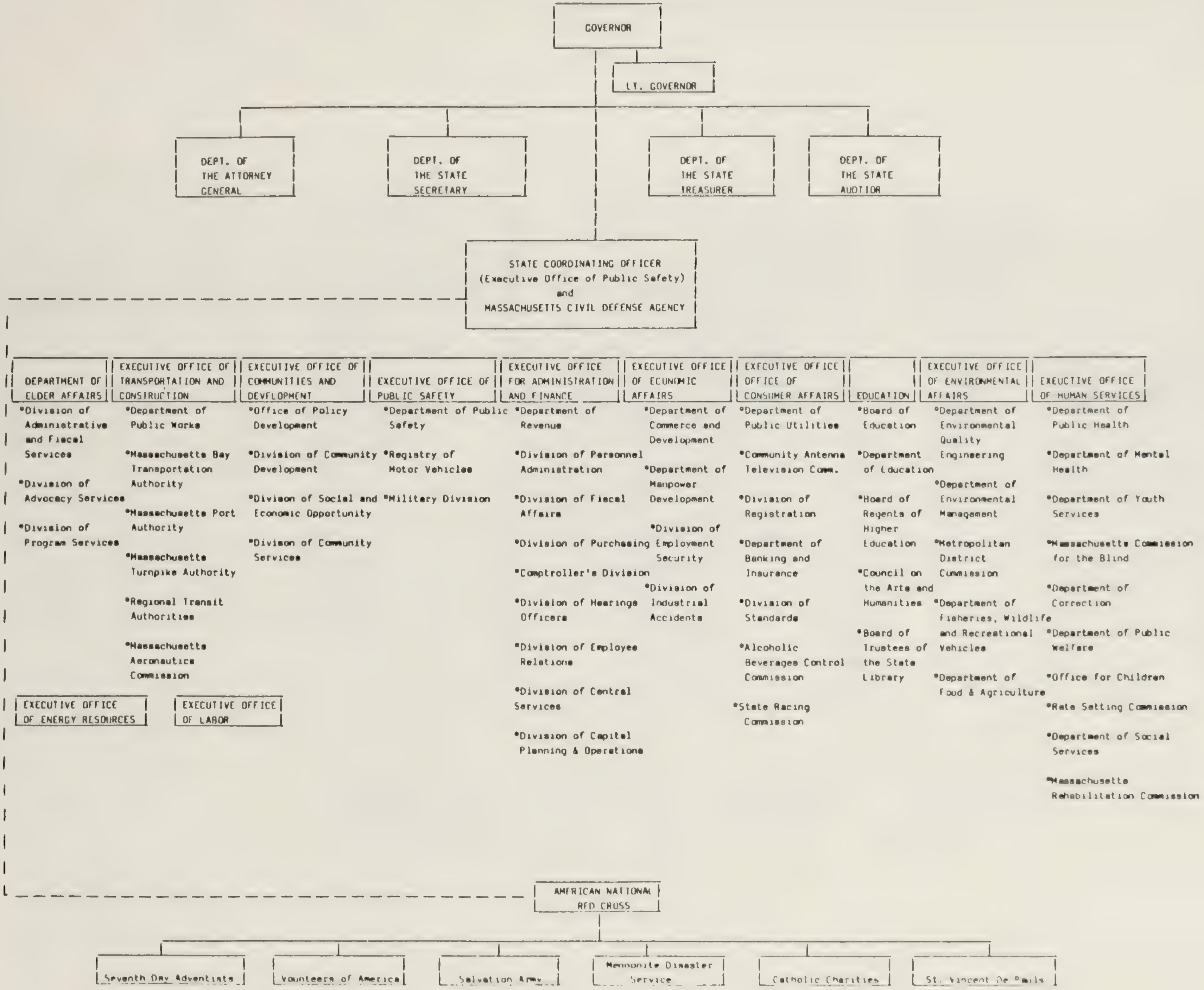
State Coordinating Officer (SCO) -- person appointed by the Governor to act as his principal assistanct in the supervision of the disaster assistance program, and to act in cooperation with the Federal Coordinating Officer.

Federal-State Agreement -- compact which sets forth the type and extent of Federal assistance and contains the necessary terms and conditions for such assistance as the Director may require. 1

Disaster Field Office (DFO) -- temporary administrative and operations office, located in or near the disaster area, under the control of the FCO and established in coordination with the SCO.

Governor's Authorized Representative (GAR) -- person named by the Governor in the Federal-State Agreement to execute on behalf of the State all necessary documents for disaster assistance following the declaration of an Emergency or a Major Disaster, including the certification of applications for public assistance.

MASSACHUSETTS EMERGENCY OPERATIONS


GOVERNOR
LT. GOVERNOR
DEPT. OF THE ATTORNEY GENERAL
DEPT. OF THE STATE SECRETARY
DEPT. OF THE STATE TREASURER
DEPT. OF THE STATE AUDITOR
STATE COORDINATING OFFICER (Executive Office of Public Safety) and MASSACHUSETTS CIVIL DEFENSE AGENCY
DEPARTMENT OF ELDER AFFAIRS
•Division of Administrative and Fiscal Services
•Division of Advocacy Services
•Division of Program Services
EXECUTIVE OFFICE OF TRANSPORTATION AND CONSTRUCTION
•Department of Public Works
•Massachusetts Bay Transportation Authority
•Massachusetts Port Authority
•Massachusetts Turnpike Authority
•Regional Transit Authorities
•Massachusetts Aeronautics Commission
EXECUTIVE OFFICE OF COMMUNITIES AND DEVELOPMENT
•Office of Policy Development
•Division of Community Development
•Divison of Social and Economic Opportunity
•Divison of Community Services
EXECUTIVE OFFICE OF PUBLIC SAFETY
•Department of Public Safety
•Registry of Motor Vehicles
•Military Division
EXECUTIVE OFFICE FOR ADMINISTRATION AND FINANCE
•Department of Revenue
•Division of Personnel Administration
•Division of Fiscal Affairs
•Division of Purchasing
•Comptroller's Division
•Division of Hearings Officers
•Division of Employee Relations
•Division of Central Services
•Division of Capital Planning & Operations
EXECUTIVE OFFICE OF ECONOMIC AFFAIRS
•Department of Commerce and Development
•Department of Manpower Development
•Division of Employment Security
•Division of Industrial Accidents
EXECUTIVE OFFICE OFFICE OF CONSUMER AFFAIRS
•Department of Public Utilities
•Community Antenna Television Comm.
•Division of Registration
•Department of Banking and Insurance
•Division of Standards
•Alcoholic Beverages Control Commission
•State Racing Commission
EDUCATION
•Board of Education
•Department of Education
•Board of Regents of Higher Education
•Council on the Arts and Humanities
•Board of Trustees of the State Library
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
•Department of Environmental Quality Engineering
•Department of Environmental Management
•Metropolitan District Commission
•Department of Fisheries, Wildlife and Recreational Vehicles
•Department of Food & Agriculture
EXEUCTIVE OFFICE OF HUMAN SERVICES
•Department of Public Health
•Department of Mental Health
•Department of Youth Services
•Massachusetts Commission for the Blind
•Department of Correction
•Department of Public Welfare
•Office for Children
•Rate Setting Commission
•Department of Social Services
•Massachusetts Rehabilitation Commission
EXECUTIVE OFFICE OF ENERGY RESOURCES
EXECUTIVE OFFICE OF LABOR
AMERICAN NATIONAL RED CROSS
Seventh Day Adventists
Vounteers of America
Salvation Army
Mennonite Disaster Service
Catholic Charities
St. Vincent De Pauls

COMMONWEALTH OF MASSACHUSETTS

COMPREHENSIVE EMERGENCY RESPONSE PLAN

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I. PURPOSE

The purpose of Part One of this Plan is to identify responsibilities and describe actions and procedures required of State and local government in order to respond effectively to the threat or occurrence of any non-military disaster or emergency.

II. MISSION

State and local government must assure the effectiveness of PREPAREDNESS, WARNING, RESPONSE and RECOVERY measures taken to avert or minimize the effects of disaster agents.

Specifically, the mission of government with respect to these measures is:

--PREPAREDNESS To assure that all feasible steps are taken to avert disaster, or to mitigate its effects or protect the public from them;

--WARNING To assure that information on the possible impact of disaster agents is gathered and disseminated in the most timely and effective manner possible;

--RESPONSE To provide for the organization, mobilization, augmentation, direction, and control of all resources and facilities necessary to minimize the effects of natural disaster agents;

--RECOVERY To assure the most rapid and complete social and economic re-integration of disaster-stricken communities that is feasible through the coordinated application of available local, State, and Federal resources.

III. PLANNING BASIS

A. Authorities and References

1. Federal Disaster Relief Act of 1974. (Public Law 93-288.)
2. Massachusetts Civil Defense Act of 1950 (Chapter 639, Acts of 1950, as amended).
3. Massachusetts General Laws, (Chapter 579, Acts of 1968).
4. Current Executive and Administrative Orders of the Governor issued pursuant to the provisions of Chapter 639, Acts of 1950.

[Functionally-specific and Agency-specific Authorities are cited in appropriate Annexes and Appendixes to this document.]

B. Situation

Disaster agents resulting from meteorological and other natural phenomena, and from man-caused incidents constitute a continuing threat to the safety and welfare of the residents of Massachusetts.

Experience and analysis indicate that all or parts of the State are especially vulnerable to the effects of the following disaster agents:

--HURRICANE AND STORM SURGE Massachusetts coastal areas are particularly vulnerable to the storm surge effects of both tropical hurricanes and winter northeasters. The devastation wrought by wind and storm surge upon North and South Shore communities during the "Blizzard of '78" is only the most recent example. Areas along Cape Cod with a southerly exposure suffered extensive tropical hurricane damage in 1938, 1944, and in 1954. Increased development and economic activity in highly vulnerable low-lying coastal areas over recent years has heightened the vulnerability of these areas.

--RIVERINE FLOODING Flood hazard areas have been identified, by the United States Department of Housing and Urban Development (HUD), in every community in the State. However, communities along major rivers such as the Connecticut, the Nashua, the Merrimac and the Blackstone and their tributaries. and others with a history of flooding, are particularly vulnerable to riverine flood damage. Historical population and economic patterns have favored intensive use of the State's floodplains, increasing our vulnerability to major flood-caused disaster.

--TORNADO AND WINDSTORM Massachusetts has suffered more recorded tornadoes, and more recorded tornado damage, than all but a very few mid- and southwestern states. All counties have experienced tornadoes, but Worcester County and the Counties to its West are most vulnerable. Meteorological conditions make a tornado occurrence on Cape Cod, or in Bristol County most unlikely. Tornado-like windstorms spawned by thunder squall-lines typically cause loss of life, injury, and damage about equal to that caused by tornadoes in a given ten -year period.

--URBAN CONFLAGRATION Densely populated older urban areas, such as those that characterize Massachusetts, are vulnerable to urban conflagration. This is particularly true when preventive fire ordinances are not strictly enforced, when fire ways are narrow and difficult to negotiate, and when water pressures for fire-fighting are less than adequate.

--FOREST FIRE Massachusetts extensive forest areas face a critical forest fire hazard during dry periods, usually from early summer through late fall.

--EARTHQUAKE While expert opinion on the extent of the earthquake hazard in Massachusetts differs, much of the State, particularly Boston and the areas to its North and West, appears to be vulnerable to this hazard. A damaging earthquake was experienced in Boston in 1755.

--WINTER STORM The combination of an often harsh winter climate and aging, densely populated urban areas results in a high degree of vulnerability to the hazards of winter storm. The "Blizzard of '78" resulted in countless stranded motorist emergencies, fuel outages, food shortages, medical transport emergencies and emergency shelter staffing and supply problems; all over and above the devastating simultaneous effects of coastal storm surge.

--INDUSTRIAL ACCIDENTS Nuclear and conventional power plants, LNG and other facilities, hazardous materials transport, gas pipelines, and countless other industrial and transport functions render virtually every community in the State highly vulnerable to these hazards.

--OTHER HAZARDS Other disaster threats, including drought, frost and freezes and ecological disaster represent potential hazards to all communities in the State.

C. Assumptions

The effectiveness of this State Plan rests upon the following five assumptions:

1. The primary responsibility and capability for immediate disaster response lies with each city and town.

2. At any given time, though the relative disaster preparedness and response capabilities of various communities will differ, the following key elements will be present:

   a. Governing officials will have designated, and will support, some individual, usually in the community, as disaster coordinator, and assure that both an alternate and appropriate support are available to him;

   b. Local emergency forces have inventoried available resources, and are prepared to deal effectively with limited disaster or emergency occuring within the community;

c. Effective mutual aid arrangements will exist with neighboring communities for securing supplemental resources, when needed.

3. State agencies with disaster response capabilities and resources will be prepared to meet appropriate local requests for disaster assistance. Such requests will be routed through the Massachusetts Civil Defense Agency (MCDA), and coordinated by the State Coordinating Officer (SCO), Executive Office of Public Safety.

4. The State will maintain a capability for both fixed-based and mobile disaster support and coordination operations, such as that presently provided by the Massachusetts Civil Defense Agency (MCDA).

5. Local authorities, State-agency personnel, or appropriate Federal agencies will inform MCDA as soon as possible of the threat or occurrence of any event likely to result in an emergency situation beyond the effective response capabilities of threatened or stricken communities.

IV. ORGANIZATION AND RESPONSIBILITIES

Efficient and effective response by agencies of government and associated organizations must involve clearly specified units, with clearly assigned missions and responsibilities.

This Section outlines the responsibilities of the various levels of government and of some of the key instrumentalities within them.

A. Local Governments

Legally and practically, the primary responsibility for the safety of citizens and the protection of property rests with the government of each city and town.

While this plan deals primarily with the responsibilities and actions of State government, it is based on the premise that a substantial part of the State's total emergency resources are represented by the personnel and equipment of local everyday emergency forces.

Maintaining the safety and well-being of the citizenry requires that local government undertake a program of preparedness which will assure that the following responsibilities are met:

1. Identify and avoid those public actions which might increase the vulnerability of the community to disaster agents, or heighten their effects (e.g. zoning so as to needlessly encourage overdevelopment of the floodplains);

2. Encourage those public actions which reduce the community's vulnerability to a disaster agent, or mitigate its effects (e.g. floodworks, tree removal, or participation in the National Flood Insurance Program);

3. Develop and maintain a capability to receive warning of threatening disaster agents, and to rapidly disperse this warning to the public;

4. Maintain emergency forces (e.g. police and fire) adequate to respond effectively to limited local emergencies;

5. Develop or maintain the capability to rapidly augment existing emergency forces through the use of auxiliaries or through mutual aid arrangements;

6. Develop or maintain the capability to assess the severity of the situation, and, when required, to efficiently request the assistance of State or Federal authorities;

7. Effectively utilize such resources through the coordination of a local official authorized by ordinance to perform such functions;

8. Assist State and Federal officials in required recovery actions (e.g. participation in such activities as selection of sites for temporary housing or assistance centers, and the conduct of damage assessment surveys).

B. State Government

Emergency and disaster do not change the basic responsibilities of State and local governments, but rather increase the need for fulfilling them promptly and adequately, under emergency conditions.

The capability of local government to protect life, public health, and property; to maintain and repair public property; and to continue essential public services may be overwhelmed under emergency conditions.

In such instances, State government must be prepared to augment local government relief efforts through the effectively coordinated delivery of resources and personnel to stricken areas.

The State emergency organization thus conforms to the normal governmental structure, but is limited to those elements with specific emergency functions. As such, State government response is an extraordinary extension of response and activity, coupled with business as usual.

Key elements in the State government emergency organization and their responsibilities are:

1. Governor

   Ultimate responsibility for preparing for and responding to the threat or occurrence of disaster rests with the Governor under the Civil Defense Act.

   Section 5 of this Act authorizes the Governor to declare a State of Emergency upon occurrence or in anticipation of disaster cr emergency. Sections 5 and 7 of the Act authorize the Governor to exercise certain emergency powers following such a declaration.

2. State Coordinating Officer (SCO)

   Responsibility for the day-to day disaster preparedness of the State, and for the direction of disaster response, is exercised on behalf of the Governor by the Secretary of Public Safety, in his capacity of State Coordinating Officer (SCO).

3. Massachusetts Civil Defense Agency (MCDA)

   The Director, Massachusetts Civil Defense Agency (MCDA), and Civil Defense Headquarters and field staff, are the operating arm of the State Coordinating Officer (SCO). MCDA is responsible for all aspects of emergency cperations, including preparedness, warning, response and recovery.

   Additionally, following a declaration of a State of Emergency by the Governor, the Director, MCDA, exercises additional authorities and responsibilities on behalf of the Governor, and through the direction of the State Coordinating Officer (SCO). These include the specific authority to:

   a. Order the use of personnel, equipment, supplies and facilities of the Commonwealth or its political subdivisions, anywhere in the Commonwealth to combat the effects of disaster; on an around-the-clock basis; 1

b. Order the evacuation or closing of places threatened by disaster;

c. Order any street or highway closed to the public, when deemed necessary for the efficient movement of emergency forces in connection with an actual or impending emergency.

4. State Agencies

Certain State agencies have assigned disaster response functions -- either as the lead agency in a given functional field, or for the provision of support and assistance in carrying out functions assigned elsewhere.

Such assignments are made through the Executive or Administrative Order, through enabling legislation, or through this Plan or other agreement.

Section V of this Part One, "Task Assignments," summarizes such agency assignments. Responsibilities are further developed, and procedures for carrying them out, are detailed in the Functional Annexes to this State Plan.

C. Federal Government

The President is primarily responsible for ensuring that the Federal government is organized and prepared to provide supplementary emergency aid and disaster assistance to State and local governments whose resources are insufficient to meet their particular emergency or disaster problem.

Such assistance is intended to supplement, rather than replace, the efforts and available resources of State and local government.

While all Federal agencies have been directed to provide direct assistance in emergency operations to save lives and prevent injury, the general responsibility for the coordination of disaster operations at the Federal level rests with the Federal

FEMA

~~Disaster Assistance Administration (FDAA~~), of the United States Department of Housing and Urban Development (HUD).

Federal assistance under Public Law 93-288 is available upon approval by the President of a well-documented request sent by the Governor to the President through the Regional Director of FDAA.

Details of these actions are specified in Part Two of this Plan.

The nature, scope, and requirements of Federal disaster assistance programs are presented in detail in Part Two of this Plan.

V. AGENCY TASK ASSIGNMENTS

A. General

1. Activities at the Direction of the Governor

Under provisions of the Civil Defense Act, the Governor may direct any agency of State government to prepare for and carry out a variety of disaster functions, including:

a. Those for which there is an obvious functional parallel (e.g. the Division of State Police with the Police and Security function).

b. Those for which agency resources are useful for various disaster response purposes (e.g. agency mobile radio cars for emergency communications).

c. General support of disaster response and preparedness operations (e.g. clerical support to agency representatives during disaster relief operations).

2. Agency Disaster Plans

Each State agency with disaster task assignments will develop and maintain an Agency Disaster Response Plan detailing agency organizational arrangements for emergency, specific emergency task assignments, and such special procedures for implementation as may be necessary.

3. Continuity of Activity

All State officials and agencies will provide for continuity of management and control of governmental activities, and of public services, during periods of emergency. If necessary, provision will be made for the conduct of such operations from the State and/or from an alternate State Emergency Operating Center (EOC).

4. Coordination with the Massachusetts Civil Defense Agency (MCDA)

Upon the request of the Director, MCDA, each agency with assigned emergency response functions will appoint personnel to provide liaison between MCDA at the Headquarters and Area level, and headquarters and district elements of the agency they represent. The authorities and responsibilities of such personnel will be set forth in the agency's Disaster Response Plan.

5. Assistance to Political Subdivisions

State agencies having emergency responsibilities will render direct assistance, in their areas of responsibility, to political subdivisions of the State, when so required by the situation and so requested by local authorities.

6. Mutual Emergency Field Support Plans

Those agencies having geographically decentralized operations (divisions, districts, local offices, etc.) will direct the supervisors in charge of such operations to develop mutual emergency field support plans in cooperation with MCDA Area personnel.

B. Specific Assignments

Assigned responsibilities for specific State agencies with clear-cut emergency roles and responsibilities are listed below. Such assignments are made under the provisions of Executive Order 144.

1. Administration and Finance, Executive Office of

--Recommends transfer of State appropriations to finance emergency operations or to match Federal disaster funds;

--Controls the use of State-owned vehicles to meet emergency transportation needs;

--Provides guidance to local governments in the management of disaster assistance funds.

a. Division of Capital Plans & Operations

--Assists in the conduct of damage assesment of publically-owned, state and local buildings;

--Supervises construction of mobile or prefabricated housing sites and installation of utility services.

b. Department of Revenues

--Conducts State audits of Federally-funded disaster assistance programs;

--Provides staffing at Disaster Assistance Centers (DAC), to work with IRS in assisting taxpayers to compute casualty losses.

c. Massachusetts Commission Against Discriminations

--Assures that all recipients of disaster assistance are in full compliance with nondiscrimination regulations.

2. Attorney General, Department of

--Establishes procedures to assure cases of discrimination or consumer fraud in the expenditure of disaster assistance funds are investigated and, if necessary, prosecuted;

--Provides legal assistance to low-income individuals affected by disaster, or arranges for such assistance through the Massachusetts Bar Association;

--Provides legal staffing at Disaster Assistance Centers, or assures the provision of such assistance through arrangements with the Massachusetts Bar Association.

3. Communities and Development, Executive Office of

Division of Community Development

--Provides staffing to the Disaster Asstance Centers to administer the State's Temporary Housing program. See Annex I, Part TWO, this plan;

--Provides for the timely distribution of emergency information to local government, including information on available disaster assistance;

--Assists local governments in the application for and administration of Federal disaster assistance following a Presidential declaration.

4. Consumer Affairs, Executive Office of

--Arranges for the provision of legal assistance and services to disaster victims;

--Provides staffing to the Disaster Assistance Center, to provide Consumer Assistance in coordination with Federal Trade Commission.

--Develops and operates programs to protect disaster victims against fraud and other abuses during recovery periods.

a. Division of Insurance

--Provides staffing to the Disaster Assistance Center to assist in providing insurance information to taxpayers.

b. Department of Public Utilities

--Develops, maintains, and operates the Massachusetts Civil Defense Agency's Utilities Service;

--Acts as a liaison between public agencies and private utility companies;

--Provides for the utilization and coordinates the procurement of public and private resources required by the utilities industry in time of of emergency;

--Assists in the conduct of damage assessments of public and private utilities.

5. Education, State Board of

a. Department of Education

--Develops, maintains and operates the Massachusetts Civil Defense Agency's Education Service;

--Assists local educational agencies in preparing grant application for the reconstruction of school facilities damaged by major disaster;

--Assists in the conduct of damage assessments of public and private non-profit school facilities;

--Provides emergency food supplies from school lunch program stocks;

--Receives donations or loans of surplus property and USDA surplus food procucts.

b. Massachusetts Firefighters Academy

--Develops, maintains, and operates the Massachusetts Civil Defense Agency's Fire Service.

6. Elder Affairs, Department of

-- Advises the Governor and Civil Defense Agency of the impact of emergency decisions (e.g. decisions to issue food vouchers) upon the elderly;

-- Assumes the maintenance or restoration of continuity of the Area Agencies on Aging;

--Insures that aging network agencies conduct an assessment of the extent of any disaster impact upon persons aged 60 years of age and over;

--Assists in coordinating public and private resources in the field of aging disaster areas;

--Coordinates the re-allocation of resources from aging projects in unaffected areas to areas affected by disaster;

--Coordinates the utilization of Title VII nutrition project resources and alternative food resources in support of disaster operations;

--Assists in staffing of Disaster Assistance Centers.

7. Environmental Affairs, Executive Office of

a. Department of Environmental Management

--Coordinates forest fire suppression efforts;

--Assists in the conduct of damage assessment of water control facilities, parks, and recreation areas;

--Provides emergency communications, intelligence, and search and rescue support.

b. Department of Environmental Quality Engineering

--Exercises responsibility for the clearance of debris from waterways, dams, and flood control works under its control;

--Exercises responsibility for evaluating the quality of water supplies and for maintaining or restoring the adequacy and safety of water supplies;

--Assures public safety through a program of routine inspection of dams, dikes, and levees;

--Monitors air quality and coordinates the response to air pollution emergencies;

--Implements the Commonwealth's Environmental Clearance regulations;

--Assists in the conduct of damage assesments of water supply, sewerage and waste disposal systems.

c. Department of Fisheries, Wildlife and Recreational Vehicles

--Utilizes watercraft in search and rescue operations.

d. Department of Food and Agricultural

--Requests Federal Agricultural Emergency Declaration;

--Provides staffing to the Disaster Assistance Centers to assist taxpayers in applying for assistance to USDA/ASCS;

--Assists in the conduct of damage assessments of Agricultural structures, homes, crops and livestock.

e. Department of Metropolitan District Commission

--Performs emergency functions associated with maintaining water and sewer systems, parks and recreation areas, harbors and waterways;

--Assists in the performance of police and law enforcement services and provides emergency communications support;

--Assists in the conduct of damage assesment of roads, bridges, water and sewer systems, and parks and recreation areas;

--Performs evacuation and search and rescue activities, particularly those involving the utilization of amphibious vehicle capability;

--Undertakes or assists in the emergency snow and ice removal operations, emergency flood protection work, and other engineering-oriented emergency activities.

8. Human Services, Executive Office of

a. Department of Mental Health

--Provides for crisis counseling and related assistance for disaster victims;

--Arranges for the provision of Federal crisis counseling and training (P.L. 93-288, Sec. 413) following a Presidential disaster declaration;

--Assists in the staffing of Disaster Assistance Centers (DACs), and the provision of crisis intervention services at DACs;

--Coordinates the utilization of resources available through the regional mental health structure for disaster or emergency application.

b. Department of Public Health

--Coordinates the Massachusetts Civil Defense Agency's Medical Service;

--Issues declarations of public health emergencies;

--Maintains a health surveillance system and monitors and controls communicable disease;

--Monitors radiation levels and is responsible for combatting radiation emergencies (see "Emergency Response to Nuclear Incident", Attachment 2, Part One);

--Arranges for the acquisition and distribution of vaccines, drugs, and other medical supplies required in disaster area;

--Advises County Medical Examiners in the preparation of plans for emergency mortuary services.

c. Department of Public Welfare

--Develops, maintains, and operates the Massachusetts Civil Defense Agency's Welfare Service;

--Administers the individual and family assistance programs, including the Individual and Family Grant Program (see TAB F to Part Two and Appendix 2 to this Plan);

--Administers the Emergency Food Stamp Program:

--Assists in the staffing of the Disaster Assistance Centers.

9. Economic Affairs, Executive Office of

a. Department of Commerce and Development

--Maintains inventories of goods and supplies needed in disaster situation;

--Maintains inventories of vacant industrial land and buildings;

--Advises the Governor and Civil Defense Agency of the impact of emergency decisions (e.g. decisions to close business or regulate commerce) upon business and industry;

--Assists business and industry by securing material, manpower and other services essential to the restoration and continuity of industry and business in disaster-stricken areas;

--Develops and operates economic recovery programs in disaster-stricken communities;

--Develops and releases emergency public information of Industrial Development Commissions, Chambers of Commerce, business associations, etc.;

--Assists in the Operation of Disaster Centers, particularly with respect to assisting applicants for business assistance programs.

b. Division of Employment Security

--Administers the Disaster Unemployment Program;

--Assists in the staffing of Disaster Assistance Centers, for unemployment compensation assistance.

10. Public Safety, Executive Office of

a. Massachusetts Civil Defense Agency (MCDA)

--Organizes and staff Emergency Operating Centers (EOCs) to insure effective response to emergency;

--Receives and reviews State agency plans for incorporation into Functional Annexes to this Plan;

--Encourages and assists in the development of local emergency response plans and programs;

--Coordinates the emergency response activities of all State agencies;

--Maintains statewide warning systems, and emergency communications capabilities;

Reserved for future use.

--Receives and disseminates emergency alerts and warnings;

--Operates State and Area Emergency Operating Centers (EOCs);

--Supports the Secretary of Public Safety in the preparation of Emergency Declarations and supporting intelligence for the Governor and disseminates such declarations;

--Receives, processes, prepares and transmits requests for Federal assistance;

--Directs receipt, allocation and status accounting of resources received from Federal agencies or from other States;

--Maintains liaison with the American National Red Cross and other voluntary disaster relief organizations;

--Coordinates emergency operations with neighboring States.

b. National Guard

--Supports civil authorities in maintaining law and order, providing security, and establishing traffic control in disaster areas;

--Assists local authorities in the evacuation of critical areas and the performance of search and rescue operations;

--Provides emergency medical care and transportation for injured disaster victims;

--Assists in debris clearance and in emergency repair of critical facilities;

--Provides emergency water supplies and supports emergency mass feeding;

--Provides emergency communications services;

--Provides engineering personnel to assist in damage assessment;

--Assists in victim identification and mortuary services.

c. Registry of Motor Vehicles

--Provides support in alerting and warning to communities or areas threatened with disaster;

--Provides support to emergency communications operations;

--Assists in providing disaster intelligence;

--Provides support to damage assessment through use of mobile radio units;

--Provides support to emergency medical operations through use of special RMV vehicles and trained emergency medical technicians;

--Provides support to search and rescue operations;

--Provides support to State and local police forces in emergency policing activities;

--Provides support to transportation and evacuation activities through control of such movements or use of RMV vehicles.

d. Division of State Fire Marshal (Department of Public Safety)

--Assists in operation of the Massachusetts Civil Defense Agency's Fire Service;

--Develops programs for the regulation of storage and transport of flammable materials, and provides planning and training services in the handling of hazardous materials incidents.

e. Division of State Police (Department of Public Safety)

--Lead-agency responsibility for Massachusetts Civil Defense Agency's Police Service;

--Lead-agency responsibility for coordinating traffic control in widespread disaster areas;

--Provides emergency alerting and warning of State agencies and local governments through various communications systems (e.g. NAWAS, LEAPS);

--Provides mobile communications, disaster intelligence, and helicopter support as required;

--Provides security for critical emergency operating installations;

--Assists local authorities in search and rescue operations.

11. Transportation and Construction, Executive Office of

a. Massachusetts Bay Transit Authority

--Provides MBTA resources for emergency transportation, debris clearance, and other emergency functions;

--Provides specialized intelligence and advice to the Civil Defense Director on impact of emergency upon the MBTA system.

b. Massachusetts Port Authority

--Provides engineering equipment and services for debris clearance, snow and ice fighting, and related emergency services.

c. Massachusetts Turnpike Authority

--Provides engineering equipment and services for debris clearance, snow and ice fighting, and related emergency services.

d. Department of Public Works

--Develops, maintains, and operates the Massachusetts Civil Defense Agency's Engineering Service;

--Coordinates debris clearance operations and the repair and reconstruction of State highways;

--Develops and implements emergency traffic regulations;

--Assists in the conduct of damage assessments of roads, streets, and bridges and estimates debris clearance and protective measures costs;

--Supplies equipment and materiels for the emergency repair of roadways;

--Assists local governments in their debris removal and road repair projects by providing personnel, materiels, and equipment.

e. Massachusetts Aeronautics Commission

--Coordinates the utilization of civil aircraft in search and rescue operations, and other emergency operations requiring the use of civil aircraft.

VI. CONCEPT OF OPERATIONS

Organized response to any emergency or disaster by government , disaster relief organization and others includes certain key concepts. The procedures described and contained in Part I Section VII, Part I Attachment and in the Functional Annexes are based upon the key concepts described in this section. 1

A. Phases of Disaster Operations

Disaster response is viewed in the context of this Plan as a coordinated effort designed to deal efficiently with disaster effects. Four distinct operational phases -- the preparedness phase, the warning phase, the response phase, and the recovery phase -- have been defined, and are described below.

1. Preparedness Phase

Effective emergency operations demand that every local government, and all State agencies and officials with assigned disaster responsibilities, maintain an adequate level of disaster preparedness. The preparedness phase is characterized by day-to-day planning, organization, and training required to meet this demand.

2. Warning Phase

Depending upon the nature of a particular disaster agent, the warning phase may be relatively short, quite long, or not occur at all. Extended warnings can be expected, for instances, for hurricanes; warnings from days to a few hours for flooding, in most cases; several minutes, with luck, in the case of tornadoes; and, ordinarily, no warning at all of earthquake.

From the State perspective, three tasks are involved in warning the public:

--RECEIPT AND EVALUATION of warning information from the National Weather Service, local or State emergency officials, or other authoritative sources;

--FORMULATION AND DISSEMINATION of warning messages to State agencies, communities, and the public;

--MONITORING of the response to warning messages, and reformulation, where necessary.

3. Response Phase

The response phase involves activities undertaken in anticipation of a disaster (when warning has been received), or following disaster impact, which are designed to protect people and property, reduce disaster effects, bring prompt and effective relief to affected individuals, and pave the way for for effective recovery measures.

All response phase activities are either evaluation actions (e.g. intelligence gathering and damage assessment), or resources application actions (e.g. evacuation and mass feeding).

The response phase is characterized by three operational levels, which involve specific preparatory actions to be taken by officials with emergency responsibilities:

--STANDBY LEVEL This increased level of readiness on the part of agencies, officials and communities is directed when there is warning of a potential disaster situation. The status of disaster response capabilities, communications, resource capabilities, and similar matters are checked, and key officials and agencies are instructed to await further information.

--ALERT LEVEL Appropriate disaster staffs and resources are activated when a potential disaster impact appears likely or certain. This level involves such preparedness steps as preparation for evacuation of threatened areas, pre-positioning of emergency resources, and assembly of disaster response units.

4. Recovery Phase

When the critical phases of disaster response are completed and the need for provision of immediate relief to the victims of disaster are met, the Recovery phase of disaster operations begins.

This phase involves long-term relief and rehabilitation, and lasts until the effects of disaster on communities, business, and families and individuals are overcome as fully as possible. Such actions may well extend over a period of months, or even years.

Coordinated State recovery phase activities are described in detail in Part Two of this Plan.

(In most disaster situations, the response phases, which are set forth above in logical sequence, will overlap for various locations, for different disaster functions, or, for the respective governmental response level -- local, State or Federal.)

B. Centralized Response Coordination

It is important that government emergency response to natural disaster be accomplished through existing organizational arrangements, augmented, as necessary. by additional personnel and resources as required by the situation. Such an approach, a logical extension of governments' dealing with day-to-day emergency, allows identification by disaster victims with well-known government officials and processes during times of extraordinary need.

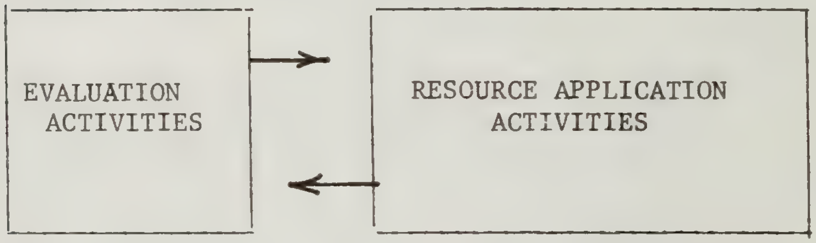
The principal focus of emergency response to disaster should be upon:

--EXPANSION of routine emergency services, such as police, firefighting, and sanitation;

--PROVISION of those things which the individual citizen normally takes care of by himself, but which must be publically provided followinging disaster, such as food, housing, and individual welfare;

-- SPECIAL PROVISION of emergency medical care to assure speedy and adequate treatment of the injured.

A simplified illustration of the response process reveals that only two basic kinds of activities take place -- evaluation activities and resource application activities.



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Based upon analyses of needs revealed from intelligence reports, emergency resources and personnel are marshalled, and utilized to reduce disaster effects. Application of these resources results in a modified situation, and in a need for revaluation.

Meeting extraordinary needs effectively demands that certain key functions be carried out centrally, at whatever governmental level is involved. Among these key functions are:

--COMMUNICATIONS AND WARNING
--EMERGENCY INTELLIGENCE GATHERING AND ANALYSIS
--COORDINATION OF EMERGENCY OPERATIONS
--PUBLIC INFORMATION

At the local level, such functions should be carried out by a duly appointed emergency preparedness officer, usually the local civil defense director. The circumstances under which such centralized coordinative control is to be exercised should be clearly set forth in local emergency plans.

At State level, centralized response coordination is the responsibility of the Secretary of Public Safety, and is effected through the Massachusetts Civil Defense Agency (MCDA). A detailed description of the way in which these key functions are performed by MCDA is set forth in Attachment 1, "Emergency Response Functions," to this Part One.

At the Federal level, centralized response coordination is carried out by the ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA. Federal disaster assistance is described in Part Two of this Plan.

C. Disaster Support Action

1. Basic Local Responsibility

The primary responsibility for dealing with the effects of disaster lies with each city or town. Most materiel useful for emergency operations, and most of the trained personnel accustomed to dealing with emergency situations, are already at the disposal of the cities and towns. Local resources can be brought to bear more quickly and effectively than resources from outside the community.

Disaster conditions will often overwhelm a community's abilities to cope with its effects. In such cases, a community should first look for assistance from its neighboring cities and towns -- either through existing mutual aid arrangements, or on an emergency basis. The Massachusetts Civil Defense Agency (MCDA), has the authority to transmit requests from the city or town in which the disaster has occurred to other cities or towns, but has no legal authority to order any city or town to assist any other city or town except during a State of Emergency declared by the Governor.

Because of the possibility that the transmission of such requests may be misinterpreted, it is MCDA policy to advise cities or towns originating such requests to transmit them directly to the recipient communities, unless it is not reasonably possible to do so, and failure by MCDA to transmit the request would jeopardize life or property.

2. Support from Civil Defense Area Resources

When local resources are insufficient in number or type to cope with the effects of disaster, local authorities can request assistance from among

State resources, or resources of communities beyond their mutual aid membership, through their MCDA Area Emergency Operating Center (EOC). The Area Director may call upon State agencies within the Area for such support, and following a declaration of a State of Emergency by the Governor, may direct the use of local resources within the area to provide needed support. If State and local resources within the Area are insufficient to meet justified local requests, the Civil Defense (MCDA) Area Director will relay the requests to MCDA Headquarters.

3. Support from the State Level

The Secretary of Public Safety exercises overall responsibility for providing required emergency assistance to cities and towns. The Civil Defense Agency (MCDA) will evaluate requests for assistance, and seek such assistance through State agencies, or, following a declaration of a State of Emergency by the Governor, from cities and towns. If such resources prove insufficient, or poorly located, the Civil Defense Director may request assistance from adjacent States under the Interstate Civil Defense Compact.

4. Support from Federal Agencies

Federal disaster assistance is intended to supplement, but not to be a substitute for, that afforded by the States and their political subdivisions, and by private relief organizations. The nature of such assistance is described in Section IV of Part Two of this Plan.

VII. PROCEDURES

This Section sets forth, in summary form, procedures to be followed by officials at various levels of government in response to the threat or actual occurrence of disaster. These procedures represent a standardized response to the full range of disasters to which the Commonwealth is known to be vulnerable, and is, necessarily, generalized.

In instances where either the nature of the disaster agent or the nature of emergency response to it permit more detailed planning before the event, hazard-specific procedures have been developed. These appear as supplements to this Part One (see Attachment 2, "Hazard-Specific Supplements").

A. Warning and Alerting Actions

Generally, the State's warning and alerting systems will be triggered in one of two ways:

--EXTERNALLY Information on a developing disaster situation often will reach State Civil Defense (MCDA) officials through their monitoring of National Weather Service teletypes, or may be transmitted to the State over the National Attack Warning System (NAWAS);

--INTERNALLY Information on developing or actual disaster situations may be transmitted to MCDA by local officials, or State officials, from the threatened or stricken area.

Upon notification of threatened or actual disaster, the following actions will take place:

1. The Massachusetts Civil Defense Agency will alert State officials, the ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA, the Defense Civil Preparedness Agency (DCPA), the American National Red Cross and other service agencies, and appropriate other Federal agencies;

2. Public warning will be affected through established warning systems, in accordance with Attachment 1 to this Part One;

3. State, Area and local Emergency Operating Centers (EOCs) will be activated as rapidly as possible.

B. Response Actions

1. STANDBY Level

The MCDA Director will declare a STANDBY level when the likelihood of emergency conditions requiring ALERT level actions increases significantly. Following a STANDBY level declaration, the following actions will be taken:

a. State agencies with disaster functions will review their current state of preparedness, and take all steps necessary for timely response to ALERT and EMERGENCY OPERATIONS level declarations. The detailed steps involved are set forth in the agency plans developed in conjunction with this Plan.

b. Voluntary disaster relief agencies will be notified of the STANDBY condition in accordance with Section IV, "Coordination of Emergency Operations," of Attachment 1 to this Part One, and will take such preparatory action as may be required or previously agreed upon;

c. Local authorities will be similarly notified, and will review local preparedness, and insure the continued availability of required disaster response personnel for so long as the STANDBY condition continues;

d. The Massachusetts Civil Defense Agency (MCDA) will gather and analyze intelligence on the potential disaster situation, and utilize this information to keep threatened communities, State agencies, the Secretary of Public Safety, and the Governor informed, and to determine what additional steps should be taken;

e. MCDA will inform the Governor, through the Secretary of Public Safety, and appropriate State and Federal agencies of action taken as a result of the STANDBY condition.

2. ALERT Level

The MCDA Director will declare an ALERT level when a disaster or major emergency situation is imminent. Following an ALERT level declaration, the following actions will be taken:

a. Local Action

Local authorities will immediately implement alert level measures as set forth in local emergency response plans. Such measures may include, but are not limited to the following:

(1) Activation of emergency operating centers;

(2) Alerting citizens of the threatened area of the hazard, its nature, its timing, and possible protective actions that can be taken;

(3) Activation of disaster response units;

(4) Evacuation of threatened areas;

(5) Notification of neighboring communities of the potential need for mutual aid assistance;

(6) When local resources -- including those available through mutual aid arrangements -- are likely to prove insufficient in quantity or type to cope with the threatened situation, requesting State and/or Federal assistance through the appropriate Area Civil Defense (MCDA) Headquarters.

b. State Action

State officials will immediately take ALERT level measures as set forth in State Agency Disaster Response Plans, or such actions as are otherwise directed. Such actions may include, but are not limited to the following:

(1) Activation, to the extent deemed necessary, of the State Emergency Operating Center (EOC), Framingham, and of required MCDA Area Headquarters;

(2) State agencies with disaster functions will activate designated agency staff and mobile resources, as provided in their respective agency plans;

(3) The Massachusetts Civil Defense Agency (MCDA) will gather and analyze intelligence as available, and prepare and forward required reports through the Secretary of Public Safety to the Governor, the ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA, and other appropriate Federal agencies (see Section III, "Emergency Intelligence," of Attachment 1 to this Part One).

3. EMERGENCY OPERATIONS Level

The MCDA Director will declare the EMERGENCY OPERATIONS level in effect whenever an emergency or disaster situation develops to the point where large-scale organized disaster response is required. Following an EMERGENCY OPERATIONS level declaration, the following actions will be taken:

a. Local Jurisdictions

(1) Activate emergency operating centers;

(2) Activate required emergency response units;

(3) Invoke mutual aid arrangements if local arrangements are insufficient, or respond to aid requests upon receipt;

(4) When local resources, including mutual aid, are inadequate to cope with the situation, request State assistance in accordance with the provisions of Section IV of Attachment 1 to this Part One;

(5) Provide required intelligence reports in accordance with Section III of Attachment 1 to this Part One;

(6) Take all other steps necessary to minimize loss of life, injuries, and damage to property.

b. State Government

(1) The MCDA Director will execute all or a part of this Plan, will so inform the Secretary of Public Safety, and will provide the Secretary with the information the Governor needs to determine if and when an Emergency Declaration is necessary;

(2) MCDA State and Area Emergency Operating Centers (EOCs) will coordinate the provision of State support to affected communities in accordance with the procedures set forth in Section IV of Attachment 1 to this Part One;

(3) The Massachusetts Civil Defense Agency (MCDA), in coordination with and on behalf of the Secretary of Public Safety, will gather required information, and develop requests for Federal assistance, including requests for Presidential declarations of "Emergency" and "Major Disasters"; (Guidelines for requesting Federal assistance appear in Part Two of this Plan.)

(4) The Secretary of Public Safety will forward such requests, with required supporting information, to the ~~Federal Disaster as~~- FEMA ~~sistance Administration (FDAA~~) through the Governor.

When the disaster situation reaches such a magnitude that State resources are required, such resources are committed as the situation demands, in accordance with the procedures set forth in Section IV of Attachment 1 to this Part One.

The most readily available assistance to communities from State agencies prior to a major disaster declaration is described below:

State Police and MDC
- Radio communications at the scene
- Control of traffic
- Security
- First Aid
- Rescue and evacuation

Department of Public Works
- Rescue and evacuation
- Debris removal
- Flood fighting
- Traffic regulation
- Damage assessment
- Transportation

Department of Public Welfare (and voluntary agencies)
- Registration of displaced persons
- Reuniting families
- Emergency feeding
- Emergency clothing and shelter

National Guard
- Communications
- Security
- Traffic control
- Search, rescue, and evacuation
- Transportation

c. Federal Actions

When the combined efforts of local and State government are insufficient to cope with the effects of the disaster situation, the State may request assistance from Federal agencies having statutory responsibilities for disaster relief. If the magnitude of the disaster warrants assistance beyond that available under statutory authorities of individual Federal agencies, the Governor will request a major disaster or emergency declaration from the President.

Federal action will include the following:

(1) The Regional Office of the FEMA ~~Federal Disaster Assistance Administration (FDAA)~~ will provide coordination of State requests for disaster assistance;

(2) FDAA will take such action as will assist in expediting State requests for Federal assistance. When circumstances require

and when specifically requested by the Governor, such action may include assignment of Federal agency personnel to joint Federal/State field assessment teams;

(3) Take such steps as the disaster situation warrants.

(Federal disaster assistance is covered in detail in Part Two of this Plan.)

I. INTRODUCTION

One of the primary goals of government, with respect to dealing with disaster and emergency, is the development of the capability, at both State and local levels, to effectively coordinate disaster operations.

This capability involves having the plans, organizations, procedures facilities, and equipment necessary for governments to analyze an emergency situation, and take effective action to preserve lives and property, and manage emergency resources.

During day-to-day operations, most governments conduct their business from offices grouped into departments or agencies. These units may be in the same building, or widely dispersed throughout the jurisdiction. Since continuous close coordination is generally not necessary for day-to-day operations, the telephone, inter-office mail, or personal appointments suffice.

Major emergencies present problems quite different from those arising in daily civil government operations.

Meeting these unique problems at the State level, which involves a need for greatly accelerated decision-making and action, is the task of the Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA).

MCDA accomplishes this task through the coordination of various resources -- personnel and material -- useful in combatting disaster effects.

These resources are brought to bear through the general plans and procedures set forth in Parts One and Two of this Plan, and the more specific procedures detailed in the Functional Annexes to the Plan.

MCDA views four very general emergency response functions as critical to carrying out any emergency response task, and as an integral component of Part One, "State and Local Response," of this Plan. These key functions are:

A. Warning and Communications

Emergencies which are preceded by a recognized buildup period can provide a basis for advanced warning to people in areas which might be effected. Other emergencies occur without advanced warning, but nonetheless require the prompt mobilization and commitment of emergency forces following the onset of emergency.

In either case, all levels of government must be prepared to evaluate and respond to such situations. Basic to such response are effective warning systems, and effective communications systems to carry both warning messages, and the traffic necessary to coordinate emergency response.

B. Emergency Intelligence Gathering and Analysis

An accurate determination of the nature and extent of each emergency situation, and the on-going effectiveness of remedial measures, is the basis upon which rapid decisions on the large numbers of problems which attend an emergency are made.

The efficient collection, collation, evaluation, and dissemination of situation information is a first step in bringing supportive resources to bear.

C. Coordination of Emergency Operations

Emergency situations require prompt, concentrated and coordinated response. Direction and control of emergency operations can best be accomplished through the use of Emergency Operating Centers (EOCs) which provide for overall analysis of the situation and centralized control of the emergency organization. If necessary the EOCs can be staffed and operate on a 24-hour basis to meet the needs of the situation. 1

D. Public Information

The public requires and expects timely and factual warning, emergency information, advice, and action instructions. All levels of government share the responsibility of developing the means and methods of providing this information.

These four critical response functions are described, and procedures for carrying them out set forth, in this Attachment. These Sections are designed to both supplement and amplify Part One, "State and Local Response," of this Plan

II. WARNING AND COMMUNICATIONS

A. Purpose

The purpose of this Section is to provide guidelines and procedures for: (1) Effective dissemination of warning of predictable natural disaster; and, (2) Effective utilization of existing communications capabilities to receive and disburse such warning; and to conduct emergency operations.

B. Responsibilities

1. Local

It is the responsibility of city and town governments to develop effective warning systems so that precautions can be taken to lessen the effects of severe weather and other hazards. Each city or town should strive to provide the following capabilities for the protection of its citizens:

a. An outdoor warning system capable of being heard throughout densely settled areas of the community. (Such systems may involve sirens, horns, or whistles. Since such systems are ordinarily used for multiple purposes, e.g. fire, enemy attack and natural disaster, distinctive signals for each eventuality must be devised. Frequent testing for public signal recognition and appropriate public response is necessary.);

b. An indoor warning system. Public outdoor warning devices do not effectively penetrate all modern buildings and homes, nor are such devices feasible in areas of low population density. Radio and television broadcasts are excellent alternatives where stations are available. Tone activated monitor radios, tuned to the National Weather Service FM frequency can be used by communities to provide warning in large public buildings;

c. Participation in emergency communications warning networks. These may include the networks of regional law enforcement associations, fire departments, civil defense units, highway departments, or amateur radio groups;

d. Emergency warning and communications plans detailing mechanisms through which the maximum number of citizens can be reached under various hazard conditions, including provisions for warning of people with sensory handicaps;

e. An emergency operating center (EOC) equipped and manned to receive incoming information, with the responsibility of analyzing and evaluating that information, and with the authority to disseminate a public warning when the need arises;

f. The capability to train appropriate personnel in communications and weather spotting and reporting procedures, and to test the competence developed through such training.

2. State

While the prime responsibility for receipt and dispersal of warning messages rests with each community, the State has an important coordinative role in assuring that timely warning reaches communities, and that communications capabilities permit its rapid dispersal.

Besides having considerable communications capability of its own, the State, because of its larger size and its regulatory powers, is in a better position to integrate private sector communications capabilities for emergency use.

The lead State agency for assuring that these objectives are met is the Massachusetts Civil Defense Agency (MCDA). MCDA is assisted in this task by the State Bureau of Data Processing and Telecommunications, State Police, the Department of Public Works, the Division of Law Enforcement of the Executive Office of Environmental Affairs and other State agencies with communications capabilities. State responsibilities for warning and communications are:

a. Provide for the receipt and dissemination of National Attack Warning System (NAWAS) warnings, intelligence, and alerts;

b. Provide and direct a Statewide emergency communications system through integration of community warning systems with State, regional, local, and amateur (RACES) communications systems;

c. Staff, organize, and operate a State Communications Center (MCDA Emergency Operating Center, Framingham);

d. Assist, advise, and encourage local government in the development of effective outdoor and indoor warning systems, Emergency Operating Centers (EOCs) and communications networks for the dispersal of warning;

e. Subscribe to the National Weather Service's teletypewriter service, monitor reports, and relay severe weather warnings to local communities, as conditions dictate.

3. Federal

a. National Weather Service

(1) Maintain a system of weather stations providing weather information including flood and severe storm warning and forecasting;

(2) Disseminate weather warning by all means available, including weather teletype, newspapers, radio and television, and other means such as the National Attack Warning System (NAWAS).

b. Defense Civil Preparedness Agency (DCPA)

The ~~Defense Civil Preparedness Agency (DCPA)~~ FEMA, assists the National Weather Service through maintaining the National Attack Warning System (NAWAS), and authorizing its use by the National Weather Service to disseminate severe weather warning information.

C. Organization

1. The State Warning Point is State Police Headquarters, Boston;

2. The State Police Communications Officer oversees the Primary Warning Point functions in accordance with procedures established by the Director, Massachusetts Civil Defense Agency (MCDA), through the State Warning Officer, MCDA. (MCDA may assume control of the National Attack Warning System (NAWAS) network at any time during emergencies, tests or exercises at the discretion of the State Warning Officer, MCDA.);

3. The Alternate State Warning Point is the State Emergency Operating Center (EOC), Framingham;

4. Massachusetts NAWAS warning points are listed in TAB C;

5. Pertinent National Weather Service operations are as follows:

   a. The National Meteorological Center, Suitland, Maryland;

   b. The National Severe Storms Forecast Center, Kansas City, Missouri;

   c. River Forecast Center, Hartford, Connecticut;

   d. National Weather Service Office, Logan Airport, Boston.

D. Procedures

1. The National Weather Service maintains a Weather Wire Service Teletypewriter System in New England. This system makes around-the-clock weather information available to all mass dissemination media such as newspapers, radio and television stations, news wire services, and to other interests willing to pay the cost of terminal access to the system.

The National Weather Service keeps all subscribers to the Weather Wire Service continuously advised on weather conditions by providing the latest weather bulletins, weather watches, local weather statements, forecasts, and warnings throughout Massachusetts. Severe weather transmissions take top priority, and have precedence over all routine transmissions until the emergency ends.

a. Severe Weather Watches, Warnings, Reports and Summaries are unscheduled. They are issued as required, but at least hourly when any part of Massachusetts and neighboring States is included in a Severe Weather Watch area.

b. River Summaries and Forecasts are daily river stages and forecasts for principal area rivers.

c. Flood Reports and Forecasts are issued as needed.

2. The above reports, in addition to direct dissemination to local community warning centers equipped to receive them, are disseminated to the State Warning Point (State Police Headquarters, Boston) via the National Attack Warning System (NAWAS) and the National Weather Service Teletypewriter Service. The State Emergency Operating Center (EOC) provides a back-up communications network. Communications available are as listed in TAB A.

3. Massachusetts NAWAS could be expected to be activated for severe weather warning or other emergency under the following or similar circumstances:

a. Time is of the essence and existing public media or key officials are not sufficiently flexible or capable of otherwise alerting all of those who need to know within the time available;

b. Public media and key officials are not readily available, e.g. early morning hours when most radio and television stations are shut down and offices are closed. (NAWAS warning points are listed in TAB C.)

4. Severe weather warning should flow in accordance with the diagram in TAB B, i.e., from the National Weather Service to the local community and the media. Also, local authorities should report unusual or severe weather conditions to the National Weather Service.

5. The State Warning Point (State Police Headquarters, Boston), and the State Emergency Operating Center (MCDA, Framingham -- the alternate State Warning Point) are both manned on a 24-hour basis.

III. EMERGENCY INTELLIGENCE GATHERING AND ANALYSIS

A. Purpose

The purpose of this Section is to provide guidelines and procedures for the gathering and analysis of information on the nature and extent of an emergency situation, its evaluation, and the dissemination of intelligence on the part of officials at each level of government for use by officials at higher, lower, or parallel levels.

The efficient collection, collation, evaluation, and dissemination of such information is among the first critical steps in bringing supporting resources to bear on the emergency situation.

B. Organization and Responsibilities

The nature of emergency situations is such that pertinent information may originate at various levels of government, or externally to them. A graphic example is a tornado which may first come to the attention of officials through detection on National Weather Service radar, through observation by State emergency personnel monitoring tornado conditions, or through a siting and report by a citizen to local police.

Accordingly, the basic responsibility of each jurisdiction at any level of government is to maintain the capability to: (1) gather information needed within the jurisdiction or level of government, and extract and disseminate appropriate intelligence; and (2) be prepared to receive, evaluate, and act upon intelligence disseminated by other jurisdictions or levels of government. Specific responsibilities which must be met in order to meet this basic responsibility are described below.

1. Local

Local responsibilities include:

a. Developing the capability to receive, evaluate, and act upon emergency intelligence disseminated by State or Federal government. Such intelligence includes NAWAS (National Attack Warning System) warnings, National Weather Service bulletins, and warnings disseminated by Massachusetts Civil Defense Agency (MCDA) officials;

b. Developing and maintaining the capability on the part of local emergency forces to observe and report situations which already are, or could become, an emergency;

c. Establishing quick and effective liaison with the appropriate MCDA Emergency Operating Center (TAB D) and directly with neighboring communities also threatened, when necessary;

d. Assuring that local emergency response plans include procedures for analyzing emergency information, and developing clear and concise intelligence reports for transmission to MCDA; and that the local civil defense director, or another appropriate local official is adequately trained to carry out local intelligence procedures.

2. State

The prime responsibility for the development and dissemination of emergency intelligence at the State level rests with the Massachusetts Civil Defense Agency (MCDA). To facilitate this and other emergency-oriented tasks, MCDA is organized into four operating Areas, which blanket the State (TAB D). Besides the State Emergency Operating Center (EOC) at Framingham, each Area is equipped with an Emergency Operating Center (EOC), where emergency intelligence gathering and disseminating activities take place (TAB D).

Chapter 639 of the Massachusetts General Laws permits the utilization of other State agency personnel for civil defense purposes in time of need. Accordingly, such personnel are available and are utilized to gather and report emergency information independently, to assist in Emergency Operating Center (EOC) intelligence analysis, and to gather information as a part of field survey teams.

State-level intelligence responsibilities therefore include developing and maintaining capabilities to:

a. Monitor sources of emergency information, particularly the National Weather Service;

b. Receive reports from localities on actual or potential emergency situations;

c. Organize and transport field survey teams of trained observers to gather on-the-spot information;

d. Develop and disseminate accurate emergency intelligence for use by State and local emergency forces, by Federal emergency forces in some instances, or by such organizations as the American Red Cross;

e. Analyze and collate emergency information for transmittal through the Secretary of Public Safety to the Governor for his use in determining effective remedial measures.

3. Federal

Several Federal agencies play key roles in efforts to provide effective emergency intelligence, while the personnel and equipment of all Federal agencies are available to assist in such efforts in time of need.

Key agency roles and responsibilities are:

a. National Weather Service -- constantly monitors environmental conditions to detect potential weather hazards, and disseminates weather intelligence by a variety of means (including weather teletype and the National Attack Warning System (NAWAS) -- see Section II of this Attachment);

b. Federal Emergency Management Agency (FEMA) --coordinates Federal disaster response and recovery assistance as required by P.L. 93-288. This responsibility includes coordinating the Federal presence on disaster intelligence survey teams, notably in the area of field assessment, based on actual observations by government engineers or inspectors of the nature and extent of damages, and of potential eligibility for Federal assistance, as described in Part Two of this plan. FEMA maintains the National Warning Attack System (NAWAS). 1

c. Department of Defense -- The U.S. Army Corps of Engineers provides intelligence on the condition of dams, dikes and levees, and other Defense Department units are available to assist in emergency intelligence gathering efforts. 1

C. Procedures

1. Local

The nature of emergency intelligence operations will vary widely from community to community, mostly as a function of size, but also as a result of other variables, such as the way in which a community's government, or its services, are organized.

The procedures set forth here, insofar as they reflect internal municipal operations, are recommendations only, but the organizational capabilities implied constitute the minimum necessary to carry out this important function.

a. Each local civil defense director should appoint an intelligence officer and, where desirable, one or more deputies, who in turn should be familiar with intelligence procedures as reflected in local emergency plans;

b. The local intelligence officer, or the local civil defense director, should make arrangements with the chief, or controller, or the local message center to receive copies or advice of all incoming messages received at the local control center;

c. The local intelligence officer should arrange with emergency service chiefs (police, fire, public works departments, etc.) to utilize the field units of such services, as conditions may require, to obtain information from the field;

b. Receive reports from localities on actual or potential emergency situations;

c. Organize and transport field survey teams of trained observers to gather on-the-spot information;

d. Develop and disseminate accurate emergency intelligence for use by State and local emergency forces, by Federal emergency forces in some instances, or by such organizations as the American National Red Cross;

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a. National Weather Service -- constantly monitors environmental conditions to detect potential weather hazards, and disseminates weather intelligence by a variety of means (including weather teletype and the National Attack Warning System (NAWAS) -- see Section II of this Attachment);

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c. Department of Defense -- The Defense Civil Preparedness Agency (DCPA) maintains the National Attack Warning System (NAWAS), the U.S. Army Corps of Engineers provides intelligence on the condition of dams, dikes and levees, and other Defense Department units are available to assist in emergency intelligence gathering efforts.

C. Procedures

1. Local

The nature of emergency intelligence operations will vary widely from community to community, mostly as a function of size, but also as a result of other variables, such as the way in which a community's government, or its services, are organized.

The procedures set forth here, insofar as they reflect internal municipal operations, are recommendations only, but the organizational capabilities implied constitute the minimum necessary to carry out this important function.

a. Each local civil defense director should appoint an intelligence officer and, where desirable, one or more deputies, who in turn should be familiar with intelligence procedures as reflected in local emergency plans;

b. The local intelligence officer, or the local civil defense director, should make arrangements with the chief, or controller, or the local message center to receive copies or advice of all incoming messages received at the local control center;

c. The local intelligence officer should arrange with emergency service chiefs (police, fire, public works departments, etc.) to utilize the field units of such services, as conditions may require, to obtain information from the field;

d. Each community should organize one or more damage survey teams, with radio communications to the local control center, which can provide reliable information to the intelligence officer. If no specific channel is available for such use, arrangements should be made for utilizing one of the existing mobile radio systems in the community;

e. When a STANDBY operational level has been declared by the State Civil Defense Director, or when the likelihood of local conditions requiring emergency actions increases significantly, the intelligence function should be activated;

f. As an emergency develops, status information should be continuously gathered and analyzed, and intelligence reports prepared and forwarded to the community's chief executive officer, and where necessary, to the Area Civil Defense Emergency Operating Center (EOC) in a format consistent with current intelligence guides;

g. When an ALERT operational level has been declared by the State Civil Defense Director, or when an emergency situation develops that otherwise warrants such action, liaison should be established with the Area Emergency Operating Center (EOC), and with neighboring communities where necessary.

2. State

Emergency intelligence operations are carried out at the State level by the Massachusetts Civil Defense Agency (MCDA). As in the case of other MCDA operations, intelligence functions can be carried out at the Area level in the case of geographically limited emergency, or may involve State Civil Defense Headquarters in the case of more widespread or serious emergency, or disaster, in which case the resources of more than one Area are required.

The procedures described below are applicable to either Area or Headquarters operations, either of which can and do involve utilization of other State agency resources for the gathering, analysis, and dissemination of emergency intelligence.

a. Upon notification of the threat or existence of an emergency or disaster situation, or upon declaration of a STANDBY operational level by the State Civil Defense Director, Intelligence Sections will be activated at the State Emergency Operating Center (EOC), and at Area Emergency Operating Centers (EOCs).

b. Intelligence Sections will consist of an Intelligence Chief, his Deputies, a Map Officer, a Report Officer, and required map, report, and intelligence clerks;

c. The Intelligence Section will establish contact with meteorological, police, State agencies, and other sources, and begin assembling information of an intelligence nature;

d. Intelligence reports will be furnished by State Civil Defense Headquarters to Area Emergency Operating Centers (EOCs) for transmittal to local civil defense directors. Area Emergency Operating Centers (EOCs) will in turn furnish intelligence reports to the State Emergency Operating Center (EOC);

e. All such reports will be in conformance with MCDA internal emergency situation reporting Intelligence Bulletins. The standard geographic basis for reporting intelligence is the U. S. Geological Survey, National Topographical Map Series, 7 1/2 minute, with scale 1:24,000;

f. When essential information is lacking, or confirmation is desired, survey teams will be constituted for field intelligence duties.

Such teams will be made up of Civil Defense personnel, representatives of the Functional Services working with Civil Defense (see Section IV of this Attachment) and, in some cases, representatives of the Federal government and others;

g. The Intelligence Section will determine the nature and extent of the emergency, and the progress of response actions, and will provide the State Civil Defense Director and the Functional Service coordinators with pertinent information. This intelligence becomes the basis for command decisions on the part of the Governor, the Secretary of Public Safety, the State Civil Defense Director, and State operating officials.

3. Federal

Federal agencies involved in disaster operations have developed procedures for gathering and disseminating intelligence which are consistent with the responsibilities outlined under III. B. above.

IV. COORDINATION OF EMERGENCY OPERATIONS

A. Purpose

Emergency operations comprise all actions taken during an emergency period to protect life and property, to care for affected people, and to maintain or restore essential community services.

Because major emergencies present problems quite different from those arising in everyday government operations, a higher level of coordination is required to effect the greatly accelerated decision-making and action needed at every level of government.

Coordination of emergency operations is a task of the Massachusetts Civil Defense Agency (MCDA). This Section sets forth the guidelines and procedures through which that task is carried out.

B. Organization

1. Authority to Coordinate Emergency Operations

The direction of emergency response, is exercised, on behalf of the Governor, by the Secretary of Public Safety, and coordinated through the Massachusetts Civil Defense Agency (MCDA). These authorities are outlined in Part One of this Plan.

2. Geographic Operating Zones

For purposes of emergency response, the State has been divided, by Executive Order of the Governor, into four operating areas. Each Area has been further divided into four or more Sectors. While the MCDA field structure consists of professional staff working from each of the four Area Emergency Operating Centers (EOCs), and from Sector EOCs in Westfield and Amherst, the Agency also has the capability, from both the logistical and communications perspectives, to operate mobile command posts or temporary EOCs in any Sector.

3. Augmentation of Resources

The smallest unit in the emergency response structure is expected to handle each problem as it arises, if it has the capability to do so. Thus a city or town does not request assistance unless it has already used its own resources, or can reasonably be expected to do so. In such cases, cities and towns request assistance from their Civil Defense Area, which in turn attempts to meet the problem from uncommitted resources available within the Area. Only if needed resources, including personnel, are not available within the Area will a request for help from other Areas, other States of the Federal Government reach State Civil Defense Headquarters.

4. Emergency Operating Centers

The most effective and economical way to accomplish coordination of emergency operations is to congregate key officials within a single site -- an Emergency Operating Center (EOC). The EOC is available to respond on a 24-hour basis to any emergency situation that may arise. It is equipped to sustain such response as long as necessary. Staffing of the EOC would normally be on a 12-hour basis utilizing 2 shifts. 1 Personnel of MCDA and other state agencies are assigned to roles in the event of an emergency. Besides the EOC at Framingham which headquarters the Massachusetts Civil Defense Agency (MCDA), each Area is equipped with a staffed EOC. Each of these has the communications equipment necessary to carry out extensive coordinative tasks, involving all levels of government.

5. Augmentation of EOC Staffs

Previous emergencies have shown that qualified persons are needed to augment EOC staffs in time of threatened or actual disaster or emergency. To that end, Executive Order 144 assigns civil defense functions to certain key State agencies. Additionally, Administrative Order No. 13 directs all State agencies to make available their resources, including personnel, for performance of civil defense functions in time of need.

Such personnel are organized into functional services which maintain contact with their operating agencies through pre-designated coordinators assigned to the EOCs. State agency task assignments are listed in Part One of this Plan, and discussed in depth in its Functional Annexes.

6. Federal Assistance

All requests for Federal assistance should be directed to the State Civil Defense Director. Procedures for securing emergency assistance from the Federal government are set forth in Part Two of this Plan.

C. Responsibilities and Procedures

Responsibilities and procedures for the coordination of emergency operations among local, State and Federal government are summarized below. The operating re-responsibilities and procedures for various levels of government are set forth on a functional basis in the Functional Annexes to this Plan, while detailed responsibilities and procedures for key State agencies appear in State agency plans.

1. Local

Local civil defense organizations will become operational at times indicated by the seriousness of the situation, or upon order of the State Civil Defense Director. They will take such steps as are necessary for the protection of their communities if it appears threatened, or for the support of other communities if it appears their own will escape the force of the emergency.

Upon becoming operational, the local civil defense organization shall:

a. Confer with the chief executive of the community, advising him of the estimate of the situation as a basis for his decision whether or not to declare a local state of emergency;

b. Activate local civil defense emergency operating centers and establish liaison with the proper Area (or Sector) Emergency Operating Center;

c. Mobilize regular municipal services;

d. Assist in the mobilization of necessary local civil defense forces to supplement regular services;

e. Establish liaison with the local Chapter of the American National Red Cross, and other local disaster relief organizations;

f. Determine what outside assistance is needed;

g. Notify neighboring communities of assistance required under existing mutual aid agreements;

h. Report the type of emergency and the area affected to the State Director of Civil Defense through the proper Area Civil Defense Headquarters, advise whether a local state of emergency has been declared, and request necessary assistance;

i. All requests for assistance directed to the State Civil Defense Director should contain, at a minimum the following information:

--Name, address, telephone number and title of persons reporting the emergency situation;

--Nature and extent of the disaster or emergency;

--Danger to life and property;

--What has been done or is being done to respond to the situation;

--Type of assistance required;

--Local contact by name, title, address, and telephone number.

2. State

Key responsibilities of the Secretary of Public Safety, exercised through the Massachusetts Civil Defense Agency (MCDA), are summarized below. The operational role and responsibilities of other State agencies are summarized in Part One, and appear in detail in the Functional Annexes to this Plan (Part Three), and in State agency plans.

a. Activate the State Emergency Operating Center (EOC) at Framingham, and appropriate Area and/or Sector EOCs;

b. Establish liaison among Emergency Operating Centers (EOCs) and other civil defense forces;

c. Alert and mobilize other State agencies, as required;

d. Alert the National Guard and the Civil Air Patrol;

e. Establish liaison at both the State and Area level between the Civil Defense Agency and voluntary agencies (the American National Red Cross, the Salvation Army, the Mennonite Disaster Service, and others) equipped and trained to assist in meeting the effects of disaster;

f. Notify the Regional Director, ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA, Region I, of the type and extent of the disaster or emergency, local and State relief efforts taken, and any intention of the Governor to request a declaration of disaster or emergency;

g. Receive and act upon requests for assistance from municipal governments in affected areas;

h. Assist local governments and local civil defense directors in organizing disaster forces, in combatting effects of disaster, and in preparing and forwarding requests for assistance to State and Federal officials;

i. Request assistance from adjoining States, under mutual aid compacts. (Massachusetts has agreements with

Rhode Island, Maine, Connecticut,
New Hampshire, Vermont, and
New York.)

3. Federal

A wide range of Federal assistance is available in the event of disaster or emergency. Such assistance is supplemental to, and not a substitute for local or State resources. Such assistance is coordinated by the ~~Federal Disaster Assistance Administration (FDAA).~~ FEMA Federal responsibilities and procedures in the coordination of disaster operations are detailed in Part Two of this Plan.

V. PUBLIC INFORMATION

A. Purpose

The purpose of this Section is to provide guidelines for the dissemination of accurate and timely information to the public during periods when emergency or disaster conditions prevail. Such information, including warnings of added hazards, sources of assistance, and authoritative denial of unfounded rumors is essential to providing for the public safety and welfare.

B. Organization and Responsibilities

1. Federal, State and Local Responsibilities

Each level of government -- Federal, State and local -- is responsible for the collection, analysis, and dissemination of information regarding disaster operations within its respective sphere of responsibility.

a. Local -- If a local government does not have a public information officer, all emergency public information should be released through the head of the local government; or, an appropriate official should be appointed to act as interim emergency information officer.

b. State -- The Governor's Press Secretary will release emergency information on behalf of the Commonwealth. In some circumstances, particularly following activation of the State Emergency Operating Center (EOC) in Framingham, the Governor's Office may authorize the release of emergency information by the Secretary of Public Safety, the Director of Civil Defense, or their designees, directly from MCDA, Framingham.

c. Federal -- Federal agencies will release public information through their own public information offices, in accordance with internal operating policies and procedures relative to their own operations, or in areas for which they have special responsibilities (such as the National Weather Service's responsibility for hazardous weather warning).

2. Intergovernmental Coordination

a. During periods of emergency, a central point for collection, evaluation, and dissemination of public information (Public Information Center) should be established.

This should be at or near the center of disaster operations. In the event of widespread emergency operations, the site would logically be either the State EOC, or an MCDA Area EOC. During localized operations, a local site, preferably a local emergency operating center, should be designated for coordinated public information activities.

b. Particular care should be taken by spokesmen at each level of government to avoid issuing any statement which could be construed as indicating commitment of the resources of any other level of government without clear prior authorization from the agency controlling such resources. Special care should be taken to avoid presuming Federal recovery assistance prior to notification by ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA that such assistance will become available.

C. Procedures

1. Local

In order to meet its responsibility to disseminate accurate and timely information on local disaster conditions, local governments should be prepared to do the following:

a. Appoint a public information officer, if only temporary, to be responsible for the collection, evaluation, and dissemination of information;

b. Establish a central point for the collection, evaluation, and release of such information;

c. Maintain close liaison with Federal and State agencies in dissemination of public information;

d. Establish liaison with the news media, and conduct press conferences as required;

e. Maintain strict control and appropriate records of all news releases.

2. State

State agencies will cooperate with the Governor's Office, the Secretary of Public Safety, and the Director, Massachusetts Civil Defense Agency (MCDA), in establishing a Public Information Center during periods of disaster or emergency. Agencies having specific tasks to perform which require dissemination of information to the public shall work with the Public Information Center in releasing such information as early as possible.

Examples of such functions are:

a. Department of Public Health information on major health hazards, protection and treatment, medical assistance, and first aid;

b. Department of Public Works information on debris clearance on public roads or private property, and condition of roads, streets, and bridges;

c. State Police, MDC, and Registry of Motor Vehicles information on public safety, security, and traffic control;

d. Department of Public Welfare information on emergency welfare services;

e. Division of Employment Security information on unemployment compensation and reemployment assistance;

f. National Guard information on security, transportation, evacuation, and emergency debris removal.

3. Federal

Federal agencies will cooperate with State and local authorities in establishing Public Information Centers, and in assuring that the release of public information is well coordinated among the various levels of government. Public announcements and releases on Federal assistance will be coordinated with and issued by the FEMA ~~Federal Disaster Assistance Administration (FDAA)~~ in coordination with the State (Governor's Press Secretary).

TAB A

Communications Available at the State Emergency Operating Center, Framingham

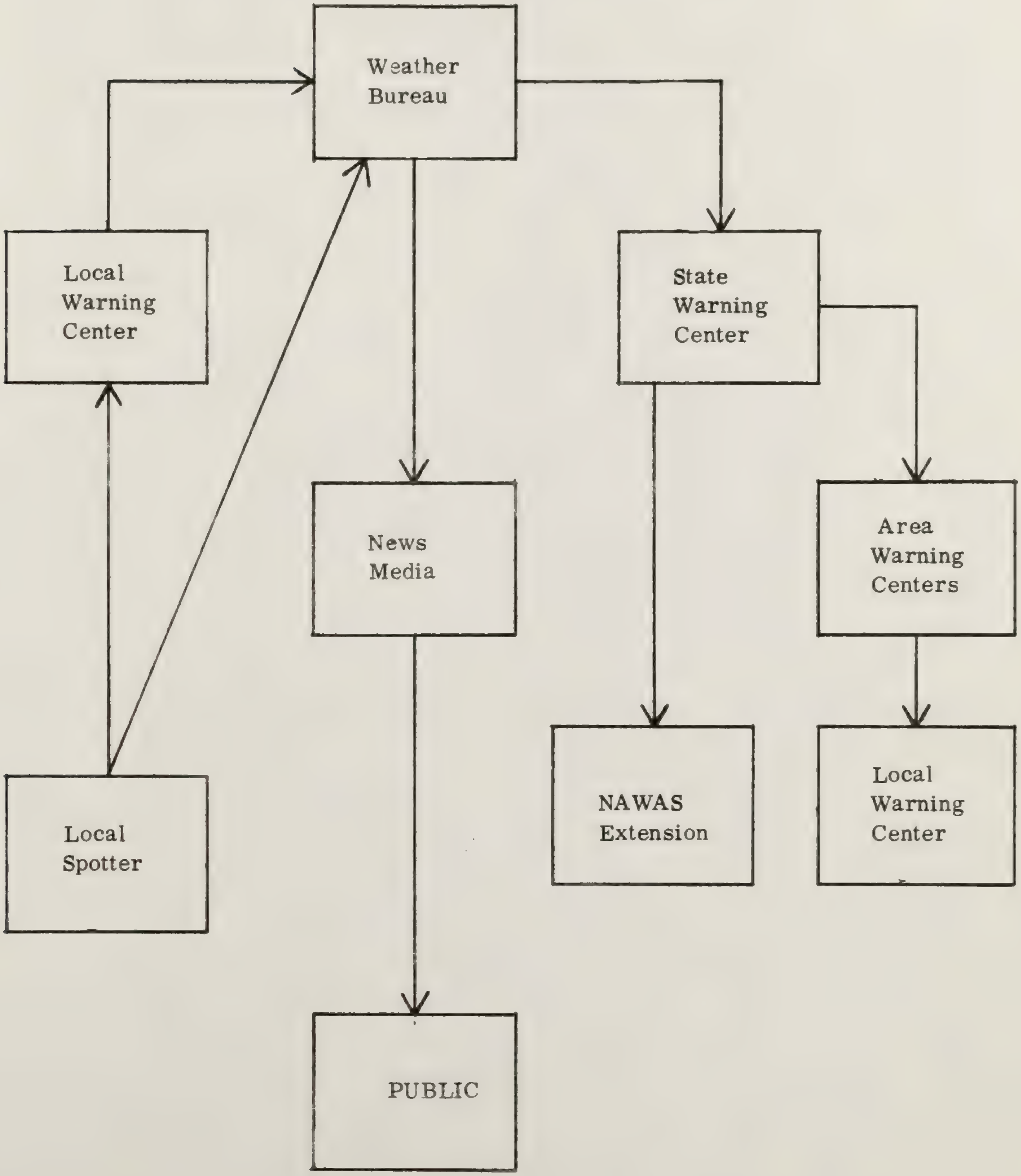
The communications capabilities listed below would be available for use in disaster warning and operations, if not damaged beyond use. Disaster-stricken areas may be required to depend upon Civil Defense, State Police, National Guard or other State agency radio nets for outside communications, or upon Radio Amateur Communications Emergency Service (RACES) nets.

CDNAVS	Federal telephone system to the Federal Regional Center, Maynard, and the contiguous States
NAWAS	National Attack Warning System -- land-line warning net to NORAD Headquarters, all 50 States, and the warning points listed in TAB C
CDNATS	Computerized teletype system providing communications to FEMA, Region I, and with world-wide communications capabilities
CDNARS	Radio net constituting a backup for CDNATS, and providing voice communications nationally and world-wide
RACES	Radio Amateur Communications Emergency Service -- Amateur Radio stations licensed for Civil Defense purposes, and providing voice and telecommunications capability world-wide
MNG	Massachusetts National Guard has radio communications capabilities to all armories, and mobile capabilities
MSP	Massachusetts State Police provide statewide radio and teletype capabilities, including station-to-station, station-to-car, and car-to-car, and State Poluce-municipal police interface
DPW	Department of Public Works provides statewide radio communications capability, including mobile.
DLE	Division of Law Enforcement (Executive Office of Environmental Affairs) has forest fire and law enforcement radio capability, including mobile

MDC	Metropolitan District Commission Police radio net covering 37 cities and towns within the Metropolitan District, and several areas outside the District, including the Quabbin Reservoir area. Includes mobile capability
MAC	Massachusetts Aeronautical Commission has air, airport and ground mobile radio capabilities
CAP	Civil Air Patrol provides air to base station and mobile capabilities
TWX	To all MCDA Area field offices via microwave
WU	All Western Union offices, primarily for wire services
NWS	National Weather Service provides teletype one-way from the Weather Bureau, Logan Airport, Boston
EBS	Emergency Broadcast System provides the Governor with the capability to broadcast via commercial radio Statewide
CB	Citizen Band radios provide communications within a stricken area

TAB B

DIAGRAM: SEVERE WEATHER WARNING FLOW



TAB C

NATIONAL ATTACK WARNING SYSTEM (NAWAS)

Massachusetts Warning Points

State Warning Point	State Police Headquarters Boston, MA	(617) 566-4500
Alternate State Warning Point	Massachusetts Civil Defense Agency Framingham, MA	(617) 875-1381 (617) 237-0200
Second Alternate State Warning Point	Mass. State Police Barracks Northampton	(413) 584-3000 (413) 584-3001

Other State Warning Points

Capitol Police	(617) 727-7570
Logan - National Weather Service	(617) 223-3100
MCDA - Area I (Tewksbury)	(617) 851-7251
MCDA - Area II (Bridgewater)	(617) 697-3111 or 3600
MCDA - Area III (Westboro)	(617) 366-5321 or 2139
MCDA - Area IV (Belchertown)	(413) 323-6306 or 5055
National Guard, Boston	(617) 782-7842
Barnstable County Sheriff	(617) 362-3434
Berkshire County	(413) 445-5992
Boston City Police	(617) 247-4680
Boston, Federal Reserve Bank	(617) 973-3602
Brockton Police	(617) 973-3603
Chicopee Fire	(413) 594-6633
Fall River Fire	(617) 675-7411
Fitchburg Fire	(617) 343-4803
Greenfield Fire	(413) 774-4737
Haverhill Fire	(617) 373-3833
New Bedford Fire	(617) 997-9431
Newburyport Police	(617) 462-4411
North Adams Fire	(413) 663-3726
Pittsfield Alternate	(413) 1292
Quincy Fire Alarm Headquarters	(617) 773-9800
Quincy Alternate	(617) 472-6118
Revere Fire	(617) 284-0014
Southbridge Fire	(617) 764-2547
Springfield Police	(413) 785-5841
Springfield Alternate	(413) 739-2181
Taunton Fire	(617) 824-4022
Westfield Police	(413) 562-5411
Worcester Fire Alarm Headquarters	(617) 752-2806
Worcester Weather	(617) 798-3815

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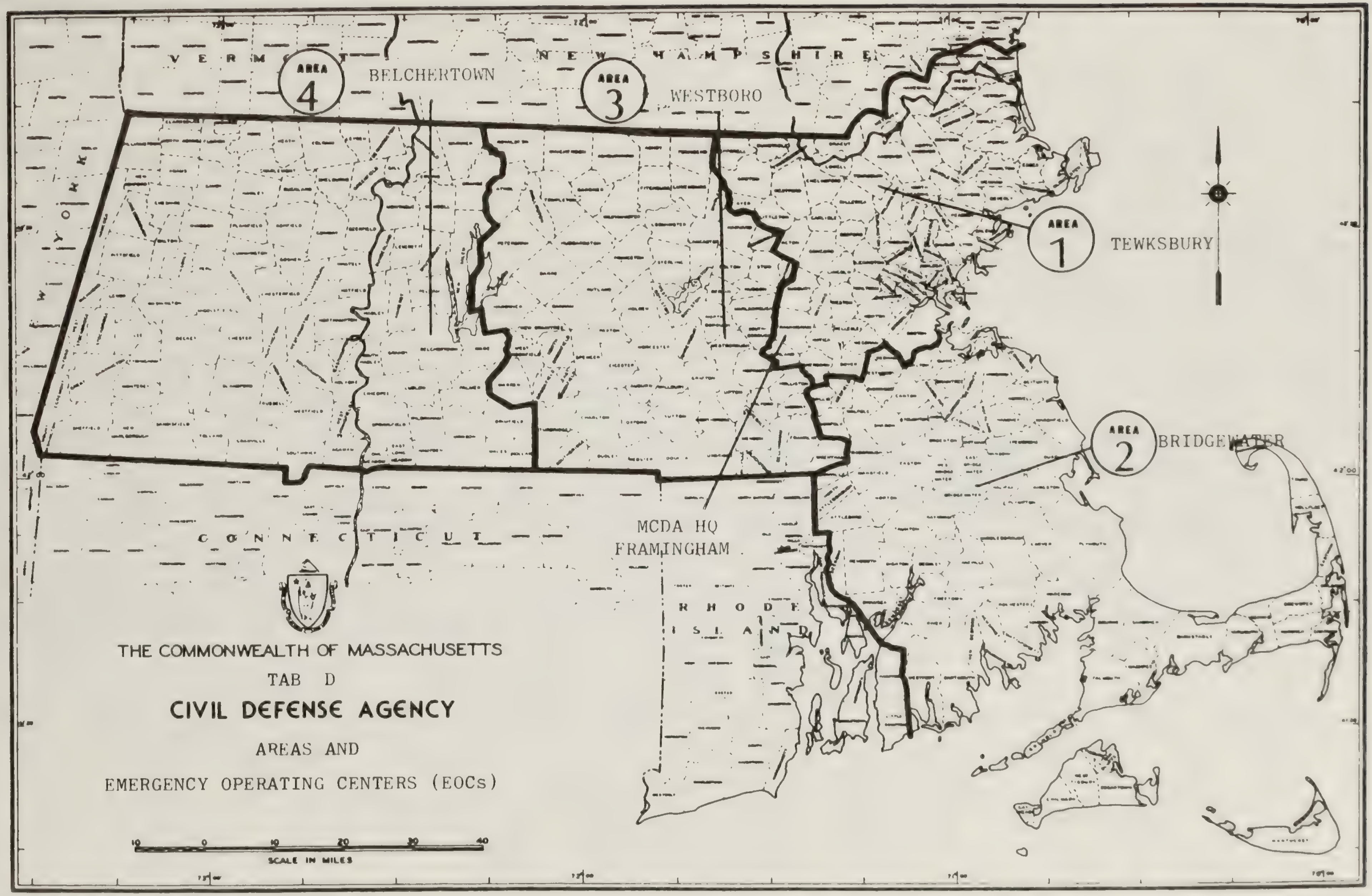


THE COMMONWEALTH OF MASSACHUSETTS

TAB D

CIVIL DEFENSE AGENCY

AREAS AND

EMERGENCY OPERATING CENTERS (EOCs)

INTRODUCTION

The procedures set forth above in Part One of this Plan represent a standardized response to the full range of disasters to which the Commonwealth is known to be vulnerable, and are sufficiently generalized to be effective in the event of undefined emergency situations.

The Hazard-Specific Supplements included in this Attachment are intended to amplify the general procedures and responsibilities of Part One proper. Supplements have been developed for these particular hazards for one or both of two reasons:

--The nature of the hazard is such that the generalized preparedness, warning or response actions described in Part One proper can be supplemented with more specific information. Weather-related hazards, such as hurricane or tornado, involving specialized warning systems developed by the National Weather Service are examples.

--The nature of the measures taken in response to a specific disaster agent can be more fully developed. An example is the planned response to possible major accidents at nuclear power stations. Because there are presently only three such sites potentially affecting Massachusetts, detailed evacuation plans for the very limited threatened areas can be developed, and specialized warning and communications systems established.

The information contained in the Hazard-Specific Supplements does not, of itself, constitute a complete response plan for dealing with a particular hazard. The material is intended to be used in conjunction with the general procedures of Part One of this Plan.

HAZARD-SPECIFIC SUPPLEMENT No. 1

Flood Protection

I. Vulnerability and Nature of the Hazard

Flooding is by far the costliest natural disaster in economic terms, both nationally and in Massachusetts, where damages average over $13 million each year.

Two types of flooding affect Massachusetts -- coastal flooding from severe ocean storms or hurricane-related storm surge, and inland flooding of rivers, streams, lakes, reservoirs, and low-lying areas caused by excessive rainfall often aggravated in Spring by rapid snow melt.

Severe ocean storms cause their most serious flooding when accompanied by strong northeasterly winds and abnormally high tides. For these reasons, high spring tides and New England coastal weather patterns have repeatedly resulted in damaging Spring storms along the north and south shores of Massachusetts Bay.

Inland flooding occurs in all parts of the State. The Federal Insurance Administration has identified flood hazard areas in each of the 351 cities and towns in Massachusetts, in connection with its National Flood Insurance Program. Communities along major rivers, such as the Connecticut, Nashua, Merrimac and Blackstone, and their tributaries, are particularly vulnerable. Spring conditions, characterized by heavy rainfall together with frozen or saturated grounds, often result in serious flooding.

II. Authority and Responsibilities

A. U.S. Army Corps of Engineers

In time of flood or coastal storm, emergency operations will be undertaken by the Corps of Engineers to supplement local and State resources in flood fighting efforts to protect life or improve property, and to rehabilitate flood control works. Emergency protective flood control measures will generally be of a temporary nature. Corps of Engineers assistance under Public Law 84-99 may include the following: furnishing technical advice and assistance; providing flood fighting materials, i.e., sandbags, polyethylene sheeting, lumber, pumps, riprap to stabilize erosion that threatens improved property, hiring of equipment and operators for flood fighting operations; and removal of debris or ice jams that are blocking stream flow and are causing, or likely to cause, flooding of communities.

Corps of Engineers Emergency Operations authorities under P.L. 84-99 include: flood emergency preparation; flood fighting and rescue operations; repair or restoration of flood control works threatened, damaged, or destroyed by flood; emergency protection of Federally authorized hurricane or shore protection projects; and the repair and restoration of any Federally authorized hurricane or shore protection structures damaged or destroyed by wind, wave, or water action of other than an ordinary nature. The law as amended includes for provision of emergency supplies of clean drinking water.

Other Corps of Engineers special continuing authorities relating to flood control include:

--Snagging and Clearing Channels for Flood Control (Sec. 208 of the Flood Control Act Approved 3 Sep 54 as amended). This authority provides for removal of snags and debris, for channel clearance, and for straightening or other construction to improve natural channels in the interest of flood control.

--Emergency Bank Protection (Sec. 14 of Flood Control Act Approved 23 Jul 46 as amended). This authority provides for construction repair, restoration, and modification of emergency streambank and shoreline protection works to prevent damage to highways, bridge approaches, other public works, churches, hospitals, schools, and other nonprofit services.

--Small Flood Control Projects not Specifically Authorized by Congress (Sec. 205 of the 1948 Flood Control Act as amended). This special continuing authority provides for construction of small flood control projects on an expedited basis subject to each being complete in itself and also meeting other specified criteria.

B. Federal Insurance Administration

The Federal Insurance Administration, (Federal Emergency Management Agency) operates under P.L. 93-234 a National Flood Insurance Program involving land-use and zoning provisions which will mitigate the flood hazard through discouraging unwise development of floodplains, and encouraging floodproofing. 1

C. National Weather Service

The National Weather Service provides flood warnings, weather forecasts, predicted river stages, peak flows, and high-water duration predictions.

D. U. S. Soil Conservation Service

The U.S. Soil Conservation Service assists in rural areas with planning and installation of flood water protection systems.

E. State Agencies

State agency responsibilities are set forth in Part One of this Plan, under "Agency Task Assignments." Key flood-related responsibilities are exercised by:

--Department of Environmental Quality Engineering in the areas of State response to water-related emergencies, flood-caused sanitation emergencies, and damage assessment of water pollution control and water supply systems;

--Department of Public Health in the areas of flood and water contamination inspection, disease vector control, and insect control;

--Department of Public Works in the areas of damage assessment for roads, streets and bridges, debris clearance, and traffic regulations;

--State Police and Metropolitan District Commission (within its jurisdiction) in the areas of rescue and evacuation, traffic control and security.

F. Local Government

The primary responsibility for preparedness planning for emergencies of all types rests with local government. Flood protection plans, providing for the utilization of manpower and equipment of local government agencies and the private sector, should address the following function:

--Monitoring and evaluating the threat;
--Public warning;
--Search, rescue and evacuation;
--Relocation and reception of evacuees;
--Emergency transportation;
--Traffic and spectator control;
--Requesting State and/or Federal assistance.

III. Procedures

A. Warning and Alerting Actions

River conditions are monitored continuously by the National Weather Service New England River Forecast Center at Hartford, Connecticut. Based on river conditions and storm forecasts, the National Weather Service transmits FLOOD WATCHES and FLOOD WARNINGS over the National Weather Service teletype.

The Massachusetts Civil Defense Agency (MCDA) may receive the first indication of possible conditions from the National Weather Service teletype at the State Emergency Operating Center (EOC) at Framingham, or from a local civil defense director, or other local official.

Upon receipt of such notification, the State Civil Defense Director will place the Agency on a STANDBY basis, contact local civil defense directors or other officials for status reports, and/or dispatch Civil Defense staff to survey the situation.

B. Response Actions

Upon determining requirements, the State Civil

Defense Director may take any or all of the following actions:

1. Alert the Secretary of Public Safety, and, through him, the Governor;

2. Alert the ~~Federal Disaster Assistance Administration (FDAA)~~, briefing them on the situation and the potential need for Federal assistance; FEMA

3. Place the Civil Defense Agency on full ALERT, and activate the State and other needed Emergency Operating Centers (EOCs) on a 24 hour-per-day basis;

4. Contact State officials and agencies for EOC staffing and other emergency duties (see Part One);

5. Where necessary, request U.S. Army Corps of Engineers assistance for flood-fighting and rescue assistance under P.L. 84-99;

6. Provide Civil Defense personnel to advise and assist local officials in obtaining needed assistance.

HAZARD SPECIFIC SUPPLEMENT No. 2

Tornado and Windstorm

I. Vulnerability and Nature of the Hazard

Tornados are the single most violent and destructive force on Earth. These brief local storms are characterized by wind speeds up to 500 miles an hour, and tremendous pressure differences, which literally cause buildings to explode.

Tornados form several thousand feet above the earth's surface, usually during warm, moist, unsettled weather, and in conjunction with a squall line of severe thunderstorms. As the squall line moves, tornados may form at intervals along its path, travel for a few miles, and dissipate. Tornados often are accompanied or preceded by violent hailstorms.

To an observer, tornado funnels first appear as an extension of the dark cumulonimbus thundercloud, and gradually stretch toward the ground. The familiar funnel shape appears light at first, and darkens as dust and debris are picked up.

Tornado paths run from a southwest to a northeast direction and are, on the average, only an eighth mile wide, and seldom more than ten miles long. There are exceptions. The 1953 Worcester tornado was one quarter mile wide, and travelled over 30 miles on the ground.

While tornados are thought of as a mid-west and south-central phenomena, tornados have occurred in every State. Massachusetts appears to be highly vulnerable, and suffers more tornados per 10,000 square miles than all but a few "tornado-belt" States.

Worcester County and the Counties to its west are the most vulnerable, while Bristol County and Cape Cod are least so. Tornados can occur at any time of year, but their frequency at this latitude begins to increase in April and peaks in June.

The violent windstorms that are spawned by the same squall lines that generate tornados can also result in heavy damage, although they are not as great a threat to life.

II. Responsibilities

A. National Weather Service

The National Weather Service (NWS) is responsible for continuously monitoring weather conditions, and for identifying conditions that can produce severe windstorms and tornados.

Two types of tornado advisories are issued by the NWS to news media, law enforcement and civil defense authorities:

1. TORNADO WATCHES are used to alert the public that weather conditions are such that the threat of tornados developing in a given area is a strong possibility, and that the public should be ready to take precautionary action in the event tornado warnings are issued;

2. TORNADO WARNINGS are issued whenever a tornado has actually been sighted in the area or its presence has been detected by radar. The warning will indicate where the tornado was discovered, the area through which it is expected to move, and the time period during which the tornado will move through the area warned. Following issuance of a tornado warning, persons in the indicated path should take shelter.

B. Massachusetts Civil Defense Agency

The Massachusetts Civil Defense Agency (MCDA) is responsible for monitoring the National Attack Warning System over which tornado watches and alerts are transmitted, and assuring that communities in the expected path of any tornado detected have been warned. MCDA also exercises the coordinative preparedness, response and relief functions covered in Part One of this Plan.

C. Other State Agencies

State agencies with mobile personnel and communications capabilities, such as the State Police and Department of Public Works, are responsible for assuring that mobile personnel are aware of the potential threat of tornados, can recognize a tornado funnel if sighted, and will take appropriate steps to initiate warning.

D. Local Government

Tornado preparedness involves planning, training, and public education, much of which must take place at the local level. Such activity might include:

1. Provision for public warning, such as audible warning signals, arrangements with local radio and television stations for broadcast interruption, and installation of National Weather Service activated UHF receivers in vulnerable public buildings, such as schools and shopping malls;
2. Development of tornado preparedness plans, and training of local officials and emergency forces in their use;
3. Undertaking programs of public education on warning procedures and precautionary measures.

III. Procedures

A. Warning and Alerting Actions

1. When conditions dictate such action, the National Weather Service will issue TORNADO WATCHES or TORNADO WARNINGS, and transmit these via National Attack Warning System (NAWAS), Emergency Broadcast System (EBS), teletype, telephone or other available means of communication to radio and television stations, the State Police and the Massachusetts Civil Defense Agency (MCDA).
2. MCDA will assume a STANDBY posture upon notification of a TORNADO WATCH, and an ALERT posture upon notification of a TORNADO WARNING. In both cases, MCDA will utilize means to disseminate the alert, and follow STANDBY and ALERT procedures outlined in Part One of this Plan.
3. Given the short warning times involved with tornados, local authorities must use all available means to assure that citizens take shelter

immediately. Radio and TV broadcasts are among the more effective means of disseminating tornado warnings and, since many local stations are not equipped with National Weather Service teletype, local authorities should alert such stations upon receipt of tornado warnings.

Because radio and TV stations depend on commercial power sources which may be interrupted during tornado conditions, and because radio and TV stations are ordinarily not on the air 24 hours, local authorities should use alternative means -- civil defense sirens, telephone or police cruiser public address systems to advise citizens to take shelter.

B. Response Actions

The suddenness with which tornados strike, and the fact that their effects are ordinarily localized, places the major burden for initial response upon local authorities and emergency forces. The range of local response actions, and procedures for securing State assistance are detailed in Part One of this Plan.

HAZARD-SPECIFIC SUPPLEMENT No. 3

Hurricane

I. Vulnerability and Nature of the Hazard

Hurricanes are tropical cyclones in which winds reach speeds of 74 miles per hour or more, and blow in a large spiral (counterclockwise in the Northern Hemisphere) around a relatively calm center -- the "eye" of the hurricane.

Hurricanes bring devastation through destructive winds, flood-producing rains, and lethal wind-generated storm surge. This storm surge, in which gigantic waves riding tides up to fifteen feet above normal can inundate areas up to 20 feet above mean high tide, has directly caused 9-out-of-10 hurricane related deaths.

Coastal areas along the southerly exposure of Cape Cod are particularly vulnerable to storm surge effects, although Massachusetts Bay communities are similarly vulnerable when the eye of the storm passes to their immediate east permitting counterclockwise winds to drive waters toward their shores.

II. Concept of Operations

Because hurricanes are slow-moving disturbances, with forward speeds usually 15-30 miles per hour, their paths can be monitored and the future course reasonably well predicted. This ability to monitor and predict a hurricane's path, permits a period of warning unparalleled for any other natural occurrence of such magnitude and potential devastation.

III. Responsibilities

A. National Weather Service

The National Weather Service is responsible for issuing notification whenever there are indications that a hurricane may affect the Massachusetts area. These include "Advisories", "Hurricane Watches", "Hurricane Warnings", and "Bulletins" which are transmitted through the teletype network and are broadcast to the public via radio and television.

1. ADVISORIES are issued by the National Weather Service whenever there are indications that a hurricane is forming.

These advisories are issued as frequently as necessary, throughout the day and night, and identify where the storm is, how intense it is, and its speed and the direction in which it is moving.

2. HURRICANE WATCHES are included in the "advisories" whenever a hurricane moves toward the mainland. A "hurricane watch" indicates that a hurricane is close enough so that everyone in the area covered by the "watch" should listen for further advisories and be ready to take precautionary action.

3. HURRICANE WARNINGS identify coastal areas where winds of at least 74 mph are predicted and are issued whenever hurricane conditions are expected to occur within 24 hours. A "hurricane warning" may also describe coastal areas where dangerously high water or exceptionally high waves are forecast, even though winds may be less than hurricane force.

4. BULLETINS are issued by the National Weather Service to help the press, radio and television keep the public informed of the progress of the storm and to advise people of appropriate preventive measures.

B. Federal Insurance Administration (FEMA)

The Federal Insurance Administration, in conjunction with its National Flood Insurance Program, is developing rate maps for communities entering its regular insurance program. Such maps should be useful to coastal communities in developing maps of vulnerable coastal areas, and evacuation zones. 1

C. Massachusetts Civil Defense Agency

The Massachusetts Civil Defense Agency is responsible for monitoring National Weather Service advisories, dispersing warning information, assisting communities with hurricane preparedness programs, coordinating State assistance when required, directing evacuation efforts when so ordered by the Governor following a proclamation of a "state of emergency."

D. Local Governments

Local governments are responsible for providing the leadership in hurricane preparedness. Each vulnerable city or town should develop preparedness programs, including plans which provide for:

1. The identification of hazardous areas;

2. An assessment of potential needs vis-a-vis available resources;

3. Evacuation of threatened areas, and care and shelter of evacuees;

4. Formulation and testing of emergency operations plans.

A checklist of highlights of such plans appears as Tab A to this Supplement.

IV. Procedures

Based upon National Weather Service advisories, and other available intelligence, the Massachusetts Civil Defense Agency (MCDA) will order a STANDBY or ALERT condition at its Headquarters in Framingham and the Areas' Emergency Operating Centers (EOCs).

Because of the relatively long warning time ordinarily available in the case of hurricanes, State agency assignees are ordinarily in place in the EOCs when operations commence, and key State agencies with emergency operating responsibilities have begun operating under their own emergency plans.

Detailed response operating procedures appear in Part One of this Plan.

TAB A

Checklist for Community Hurricane Preparedness Plan

IDENTIFICATION OF HAZARDOUS AREAS

Zone of Extreme Danger includes shorefront areas which
- --have a southerly exposure;
- --lie less than 10 feet above normal high tide;
- --are within 100-200 yards of the shoreline.

Zone of Moderate Danger includes areas inland from the Zone of Extreme Danger which lie
- --up to 15 feet above normal high tide;
- --up to 400 yards from the shoreline.

EVACUATION RESOURCES

Shelters

Survival Requirements
- --water
- --emergency power
- --fuel
- --nonperishable foods

Emergency Medical Care

Communications capability
- --to receive warning
- --to direct actions
- --for mobile control
- --to monitor disaster status
- --to request outside assistance

Transportation requirements
- --for evacuation
- --for medical emergencies
- --for supplies

Inventory of Resources
- --manpower
- --equipment and supplies

FORMULATION OF EMERGENCY OPERATIONS PLAN

Flood-prone areas

Shelters

Emergency Operating Center

Evacuation routes

Communications and warning

Transportation

Traffic control

Protection of property

Authority to Recommend or Order Evacuation

HAZARD-SPECIFIC SUPPLEMENT No. 4

Forest Fire Suppression

I. Vulnerability and Nature of the Hazard

In recent decades, the hazard of forest fires in Massachusetts has increased as more open lands revert to woods, as more people use the woods for recreation, and as developments extend into wooded areas. In addition, economic pressures have reduced governmental and private presuppression work. Under certain weather conditions -- especially in the Spring and Fall -- the woods and forests of Massachusetts can become extremely dry, and extensive fires can occur, as has happened in the past. In such situations, a wide range of Federal, State and local resources may be needed to supplement the basic forest fire-fighting efforts of cities and towns.

II. Responsibilities

A. Local

Basic authority and responsibility for fire-fighting in Massachusetts lies with the individual town and city governments. By law, the local forest warden has complete charge of extinguishing forest fires in each community; generally the positions of forest warden and fire chief have been combined. Except in extraordinary circumstances, the State role is one of supporting local efforts (including use of mutual aid resources) within one or more communities.

B. State

Basic State authority and responsibility for forest fire-fighting is assigned to the Division of Forests and Parks of the Department of Environmental Management. In addition, the Civil Defense Act specifies that forest fires are one type of natural disaster for which the Massachusetts Civil Defense Agency must be prepared, in support of the Division of Forests and Parks. In extraordinary situations, the Governor can declare a state of emergency in part or all of Massachusetts, invoking additional authority to provide required support of forest fire operations.

C. Federal

Under the provisions of Section 417 of the Federal Disaster Assistance Act of 1974, the President is authorized to provide grants, equipment, supplies and personnel to any State for the suppression of any forest or grass fire which threatens to become a major disaster.

This authority is exercised through the ~~Federal Disaster~~ FEMA ~~Assistance Administration (FDAA)~~, which in turn has executed an agreement with the Commonwealth, establishing reimbursement rates for eligible forest fire-fighting expenditures.

III. Procedures

A. Local fire chiefs may call upon the Division of Forests and Parks for required assistance. In hazardous situations, the District Fire Warden may dispatch assistance prior to a formal request.

B. The District Fire Warden will first commit those Forests and Parks resources within his District. If these appear likely to be insufficient, he can request additional assistance from other Districts in the Forests and Parks Region through the Regional Director. Further resources may be secured from outside the Region through the Director of the Division, or the Chief Fire Warden.

Should either local fire defense authorities, or officials of the Division of Forests and Parks determine that additional State resources may be required, such assistance can be requested through the appropriate Massachusetts Civil Defense Agency Emergency Operating Center (see Part One, Attachment 1, "Coordination of Emergency Operations").

Additional support includes, but is not limited to:

--State Police and/or other law enforcement and traffic control assistance;

--Air reconnaissance or emergency air transport;

--Mobile communication and emergency landlines;

--Trucks and drivers;

--Earthmoving equipment and transport;

--Water tank trucks and supplemental fire-fighting units such as powered spray trucks and trailers;

--Emergency medical aid;

--Housing and feeding for forest fire-fighters.

C. If resources available within Massachusetts are insufficient in type or quantity, the Chief Fire Warden may call upon the forest fire-fighting resources of other States, and certain Canadian provinces, under provisions of the Northeastern Interstate Forest Fire Compact. This organization also is the channel for tapping the resources of the U.S. Forest Service.

D. Massachusetts also may request appropriate resources of Federal agencies (other than the U.S. Forest Service) by request of the Federal Disaster Assistance Administration (FDAA). Under the provisions of an annually updated Federal/State Forest Fire Suppression Agreement, the Governor's Authorized Representative for forest fire is the State Director of Forests and Parks, or, in his absence, the Chief Fire Warden.

HAZARD-SPECIFIC SUPPLEMENT No. 5

Spills of Oil or Other Hazardous Substances in Coastal Waters

I. Vulnerability and Nature of the Hazard

In a period of a little over a month, beginning in December, 1976, three oil tanker accidents -- the grounding of the barge Bouchard No. 65 in Buzzard Bay, the break-up of the coastal tanker Chester A. Poling off Gloucester, and the near-disastrous break-up of the tanker Argo Merchant on the Nantucket shoals -- demonstrated dramatically the susceptibility of coastal areas of Massachusetts to the effects of spillage of oil and other marine cargoes. New England in general, and Massachusetts in particular, are uniquely vulnerable to the spillage of oil distillates and residual fuel oil because of their high degree of dependence on these products, and upon small tankers and barges for their distribution. Development of off-shore oil and gas resources, and of refineries or a deepwater port would increase the State's vulnerability.

Spills of hazardous substances are potentially disastrous both economically and ecologically. Coastal properties may become unusable, clean-up costs can be staggering, and marine resources damaged for long periods or beyond recovery.

Effective response, both in terms of containing such spills and of alleviating their effects, is the objective of this supplement.

II. Authority and Responsibilities

A. Local

Local communities, through the exercise of local police powers, are responsible for meeting any need for spill-related traffic control on local roadways.

B. State

The responsibility for promulgating and enforcing regulations for preventing or minimizing oil spills in the coastal and inland waters of Massachusetts rests with the Department of Environmental Quality Engineering's Division of Water Pollution Control, and is exercised under Chapter 21, Sections 50-50A, of the General Laws.

Coordination of preparedness action, and of emergency operations following an emergency declaration by the Governor, is a responsibility exercised by the Secretary of Public Safety through the Massachusetts Civil Defense Agency under Chapter 639 of the General Laws.

C. Federal

The U. S. Coast Guard exercises broad responsibility over all U.S. Territorial Waterways, under various Federal statutes and the conventions of international maritime law.

III. Procedures

A. Warning and Alerting Actions

1. Local

When local authorities become aware of a situation involving an actual or threatened oil spill (ordinarily through observation or reports of tanker equipment in difficulty, or of oil wash-up on beaches), all available pertinent information should be transmitted immediately to the State Department of Environmental Quality Engineering's Division of Water Pollution Control (DWPC). Such information should include as a minimum:

--date and time of observation;
--suspected nature of substance;
--suspected source of substance;
--local actions taken or anticipated.

The DWPC telephone number is (617) 727-3855 during normal duty hours. After hours, calls should go to the State Police Communication Section in Boston (617) 566-4500, who maintain an emergency list for DEQE. 1

2. State

The lead State agency for warning dispersal in oil spill situations is the Department of Environmental Quality Engineering's Division of Water Pollution Control (DWPC). Upon receipt by any other state agency (State Police, Civil Defense, Department of Public Works, etc.) of any information indicating the occurrence or threat of such a spill, such information will be conveyed immediately to DWPC.

Based upon its evaluation of the possible impact of an actual or threatened spill, the Division of Water Pollution Control (DWPC) will, as appropriate, alert all or some of the following:

--Commissioner, Department of Environmental Quality Engineering
--Secretary of Environmental Affairs
--Department of Environmental Management
--Divisions of Fisheries, Wildlife & Recreational Vehicles, Law Enforcement, Marine Fisheries, and Coastal Zone Management
--Massachusetts Civil Defense Agency (which in turn notifies the Executive Office of Public Safety)
--U.S. Coast Guard
--U.S. Environmental Protection Agency
--Local Authorities (The Massachusetts Civil Defense Agency communications and alerting systems may be utilized to alert local officials when necessary. See Attachment 1 to Part One of this Plan, "Warning and Communications".)
--Private sector clean-up contractors.

3. Federal

Primary responsibility for oil spill warning and alerting at the Federal level rests with the U.S. Coast Guard. Upon receipt of information indicating an actual or threatened serious oil spill, the Coast Guard routinely transmits such information to the Massachusetts Division of Water Pollution Control and the Massachusetts Civil Defense Agency.

B. Response Actions

1. Local

Upon notification of the threat or occurrence of a serious oil spill, the local civil defense director, or other local authority should execute local emergency plans. Appropriate local actions might include, but are not limited to, those actions taken following the issuance by State Civil Defense Headquarters in Framingham, of a declaration of STANDBY or ALERT. (See Part One of this Plan.)

2. State

a. Division of Water Pollution Control

Upon notification of the threat or occurrence of any oil spill, the Division of Water Pollution Control (DWPC) will immediately execute its own internal operations plans for dealing with such emergencies. Such plans are well developed, involve extensive coordination with Federal and local authorities and other State agencies, and are adequate to cope with the overwhelming percentage of oil spills affecting the Commonwealth.

In instances where the resources available to DWPC through its own institutional arrangements appear as though they may prove inadequate to meet a situation, DWPC will request the coordinative assistance of the Massachusetts Civil Defense Agency.

b. Massachusetts Civil Defense Agency

Upon notification of the threat or occurrence of a serious oil spill, the Massachusetts Civil Defense Agency (MCDA) will begin intelligence gathering and analysis operations. Such intelligence will be used to support any further coordinative efforts that's required, and any recommendations through the Secretary of Public Safety to the Governor on the advisibility of a Presidential Emergency Declaration, or other extraordinary action. (See Part One, Attachment 1, "Emergency Intelligence Gathering and Analysis.")

Upon notification by the Division of Water Pollution Control (DWPC) that extraordinary coordination or resource utilization capabilities are required, MCDA will commence ALERT level operations. The coordination of such operations is described in Part One, Attachment 1, "Coordination of Emergency Operations."

3. Federal

a. National Response Team

The National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 1510) provides an extensive organization to protect the environment from the damaging effects of pollution discharges, and identifies five primary and five advisory Federal agencies for carrying out the plan.

The Plan establishes a National Response Team (NRT) to serve as an emergency response team in major pollution incidents, which is chaired by either the U.S. Coast Guard (coastal spills) or the Environmental Protection Agency (inland spills).

The Plan also establishes a National Response Center (NRC), located at Coast Guard Headquarters in Washington, which is continuously manned and equipped with extensive communications facilities.

b. Regional Contingency Plans

In New England, there are two Regional Contingency Plans: one for dealing with coastal spills, prepared by the First Coast Guard District; and one for inland spills prepared by the Environmental Protection Agency (EPA).

Similarly, there are two Regional Response Centers (RRCs); the coastal RRC at Coast Guard District Office in Boston; and the inland RRC, located at the EPA Regional Laboratory in Lexington.

c. Regional Response Team

There is one Regional Response Team (RRT), led by the Coast Guard for coastal spills and by the Environmental Protection Agency for inland spills. Current RRT membership is listed in Tab A to this Supplement.

When activated, the team monitors and evaluates reports from a previously designated Federal On-Scene Coordinator, recommends courses of action, requests other Federal, State, local or private agencies to take action when necessary, and acts as a focal point for public information on the incident. State representatives to the RRT are responsible for liaison with the Governor and concerned State agencies, although a broader role for them has been sought. (See Oil Spill Prevention and Response: Report of the Massachusetts Interagency Task Force on Oil Spills, April, 1977.)

d. Atlantic Strike Team

Generally, immediate response to coastal spills is taken by the spiller himself, by regular Coast Guard units in the vicinity of the spill, or by contractors to either the spiller or the Coast Guard.

When major spills occur which require a response beyond the capabilities of the forces in the region, the assistance of the National Strike Force may be requested. Within the National Strike Force, the Coast Guard maintains three Strike Teams (Atlantic, Gulf and Pacific). The Atlantic Strike Team, located at Elizabeth City, North Carolina, is manned and equipped to provide communications support and advice and assistance in oil and hazardous substances removal. It includes expertise in ship salvage, diving, and oil removal techniques.

The Atlantic Strike Team can be quickly deployed at the request of either the Federal On-Scene Coordinator, or the Regional Response Team.

TAB A

Federal Regional Response Team for Oil or Hazardous Substances Spills

(Note: Initial reports of oil spills should be made to the Duty Officer at the National Response Center, telephone toll-free (800) 424-8802.)

Primary Agencies

*Chief, Marine Safety Division First Coast Guard District 150 Causeway Street Boston, Massachusetts 02114	(617) 223-6915
**Director, Surveillance & Analysis Division Environmental Protection Agency, Region I 60 Westview Street Lexington, Massachusetts 02173	(617) 861-6700 extension 202
Staff Operations Officer Fourth Naval Director Philadelphia, Pennsylvania 19112	(215) 755-3871 FTS 485-3871
Chief, Navigation Branch U.S. Army Corps of Engineers New England Division 424 Trapelo Road Waltham, Massachusetts 02154	(617) 894-2400 extension 330
Coordinator of Environmental Programs U.S. Geological Survey Office of Marine Geology Woods Hole, Massachusetts 02543	
Regional Director National Marine Fisheries Service Federal Building 14 Elm Street Gloucester, Massachusetts 01930	(617) 281-3600 extension 250

*Leads Coastal Regional Response Team
**Leads Inland Regional Response Team

Advisory Agencies

Regional Director (617) 223-5207
Department of Energy
150 Causeway Street
Boston, Massachusetts 02114

Regional Director
Federal Emergency Management Agency (617) 223-4741
John W. McCormack Post Office & Courthouse
Boston, Massachusetts 02109

Principal Regional Officer
Department of Health & Human Services (617) 223-6830
John F. Kennedy Federal Building - Room 2403
Boston, Massachusetts 02203

State Liaisons

The following State agencies provide representation on the RRT as appropriate:

***Connecticut Department of Environmental Protection
Water Compliance and Hazardous Substances Section
122 Washington Street
Hartford, Connecticut 06115

Department of Environmental Protection
Augusta, Maine 04330

Massachusetts Division of Water Pollution Control
1 Winter Street
Boston, Massachusetts 02110

New Hampshire Water Supply & Pollution Control Commission
105 Loudon Road
Concord, New Hampshire 03301

Department of Health
Division of Water Pollution Control
State Office Building
Providence, Rhode Island 02903

Department of Water Supply and Pollution Control
State Office Building
Montpelier, Vermont 05602

***Note: For coastal spills, Connecticut provides representation to the New York RRT.

HAZARD-SPECIFIC SUPPLEMENT No. 6

Emergency Response to Nuclear Incidents

I. Vulnerability and Nature of the Hazard

There are three types of hazards involving nuclear materials which can cause radioactivity in amounts potentially hazardous to public health. These are:

--Type A: Accidents occuring at installations such as educational, medical, industrial, or other fixed sites other than nuclear power generating stations;

--Type B: Accidents occurring during the transportation of nuclear or radioactive materials, including new or spent nuclear fuel;

--Type C: Accidents occurring at nuclear power stations.

Such accidents can result in the release of enough radioactivity so that fatalities or injuries could occur immediately or within a few weeks. In addition, some people receiving lower exposure may notice no effects, but the likelihood of their suffering from diseases such as cancer or thyroid illnesses, or of suffering genetic effects may increase over extended periods of time. Limited environmental contamination is also possible.

II. Authority and Responsibilities

A. Massachusetts Department of Public Health

Basic responsibility and authority for dealing with any type of accident involving nuclear materials is assigned by law to the Department of Public Health, and exercised through its Radiation Control Program.

The Department, utilizing such other public and private resources as may be of assistance, is responsible for assessing any potential or actual accident or hazardous situation involving radioactivity, and for advising State and local authorities and private interests of the measures which should be taken. The Commissioner of Public Health may proclain a public health emergency relative to such situations.

B. Massachusetts Civil Defense Agency

Coordinating the preparation and execution of contingency plans of local governments and State agencies so as to carry out the recommendations of the Commissioner of Public Health is the responsibility of the Secretary of Public Safety, and, under Chapter 639 of the General Laws, is carried out through the Massachusetts Civil Defense Agency.

C. Nuclear Power Stations

Nuclear power stations, by virtue of their licensing agreements with the Federal Nuclear Regulatory Commission (NRC), and agreements with the Commonwealth have accepted responsibility for on-site plans and procedures including initiating the necessary immediate action required to: 1

1. Limit consequences of an incident;
2. Evaluate conditions and determine the magnitude of an incident;
3. Immediately notify appropriate State and Federal agencies;
4. Minimize public and plant personnel radiation exposure and/or injury;
5. Take immediate steps to limit or reduce the loss to property.

The operating utility's on-site and procedures in the event of an emergency situation described in detail in their Emergency Plan Submissions to the NRC, and have been coordinated by the State and local plans through meetings, presentations and required exercises on an ongoing basis. 1

III. Concept of Operations

A. Approach

Rapid response in identifying the existence, nature, and extent of a radiological hazzard, limiting the number of individuals exposed to the hazard, providing immediate medical attention to those exposed, and effective decontamination of the environment will greatly reduce the adverse affects of nuclear accidents. Effecting such a response is the objective of the following sections.

B. Nuclear Incident Advisory Team (NIAT)

The Department of Public Health, in cooperation with the Massachusetts State Police, operated a well-tested system of response to the threat or occurrence of nuclear incidents. This response, led by the Radiation Control Program of the Department of Public Health, is conducted by Nuclear Incident Advisory Teams (NIAT), with assistance from the State Police on both initial alerting and emergency response.

The nature of the NIAT response to notification by governmental or private agencies of a potential or actual incident involving radiation release depends upon the type and severity of the incident.

NIAT team composition and procedures are described in a NIAT Information Brochure published and periodically updated by the Division of Environmental Health of the Department of Public Health (see Appendix 3 to this Plan).

C. Accidents at Nuclear Power Stations

Because of the limited number of Nuclear Power Stations in or near the State, and the fact that resulting accidents can be pin-pointed geopgraphically and their effects predicted based on radiological and meteorological data gathered, detailed planning for accidents at such stations is possible.

In Massachusetts, each Civil Defense Area potentially affected by such accidents has drawn up plans which will provide for the adequate assessment and response to any emergency situation, including the orderly evacuation of people from areas which could become contaminated when such a course is recommended by the Department of Public Health. Area response plans for Plymouth, Rowe, and Vernon, Vermont nuclear power station accidents appear as Appendix 3 to this Plan. 1

All localities which may be required to evacuate citizens, or to act as host communities under these Area plans have developed local evacuation and/or reception plans to facilitate these processes.

The operating utilities in each of these three areas have also filed on-site Emergency Plans with the Federal Regula-tory Commission (NCR) which addresses the actions for which the utility if responsible. 1

IV. Procedures

A. Type A and Type B Incidents (Fixed site other than nuclear power stations, and transportation)

1. NIAT is alerted, either directly or through the State Police, and the nearest NIAT team is activated and dispatched to the scene. Local authorities cordon off the area, until NIAT determines what the hazards are and what course of action should be followed by local and State officials.

2. If additional technical resources are required, NIAT is the source.

3. If public safety or other resources in additon to those available are required, they may be requested from the Secretary of Public Safety through the Massachusetts Civil Defense Agency. (See Part One of this Plan.)

B. Type C Incidents (Nuclear Power Stations)

Detailed procedures and classifications for incidents at nuclear power stations appear in the Radiological Emergency Response Plan (RERP) Appendix 3, and Area and local Response Plans for towns which might be affected by such incidents. These plans are included in Appendix 3 to this Plan. They are also referenced in the Emergency Plans developed by each utility company. Descriptions of each class of accident that can occur at a nuclear power station are contained in the RERP. 1

I. PURPOSE

Part Two of this Plan identifies responsibilities and describes the actions and procedures required of State and local government in order to assure that, following a disaster, effective relief, rehabilitation, and long-term social and economic recovery measures are carried out.

Such measures require the coordinated utilization of all available resources -- the public resources of local, State and Federal government, and private sector resources.

Because disaster, by its nature, often overwhelms the capabilities of local and State governments, localities and States often are forced to rely heavily on supplemental Federal resources in their recovery efforts.

A large part of Part Two therefore is devoted to describing the nature, requirements and procedures associated with Federal emergency assistance. Such assistance in support of those State and local emergency response phase measures described in Part One of this Plan are described along with Federal recovery assistance in Part Two, for the sake of continuity and clarity.

II. CONCEPT OF OPERATIONS

The procedures and requirements of the recovery programs described in this Part Two, and in the recovery-related Functional Annexes to this Plan, rest upon certain key concepts described below.

A. Disaster Operations -- Recovery Phase

Part One of this Plan defines four distinct phases of disaster operations -- the preparedness phase, the warning phase, the response phase, and the recovery phase. The recovery phase is viewed as beginning when the most critical immediate relief needs of disaster victims have been met, and longer term relief, rehabilitation, and long-term recovery operations can begin. Recovery operations are an extension of response phase operations, with relief activities overlapping the two phases. Recovery operations continue until the physical, social and economic character of the community has been restored to the pre-disaster or other acceptable condition.

B. Planning Basis

A key planning assumption of Part One of this Plan is that the primary responsibility and capability for immediate disaster response rests with each city and town. The responsibility for effecting recovery actions also rests primarily with cities and towns, but often local governments will not have the resources to cope with the varied problems of restoring social and economic viability following a disaster.

Part Two assumes that a large measure of State and/or Federal assistance will often be necessary to restore the basic social fabric of communities stricken by disaster, and, together with the recovery-related Functional Annexes to this Plan, establishes the responsibilities and procedures for applying needed supplies, equipment, personnel, facilities, technical assistance, and funds.

C. Flexible Recovery Planning

The nature of relief and recovery requirements, and consequently of the recovery measures taken to meet such requirements, will vary greatly from disaster to disaster, even when such disasters are caused by the same or similar agents.

Factors as diverse as population trends, geography, the economic situation, the adequacy of response actions, vulnerability of the area to the same disaster agent in the future, adequacy of property insurance coverage, and many others will affect the nature of needed recovery measures.

For these reasons, recovery from each disaster situation must be viewed separately, and approached flexibly. While the recovery-oriented Functional Annexes to this Plan assign responsibilities and establish procedures for carrying out specific functions often necessary to the recovery effort (Housing, Welfare Services, etc.), Part Two proper is concerned with the institutional arrangements, and with assuring effective utilization of available State and Federal assistance.

Key institutional elements for flexible recovery are: the State Coordinating Officer, and his Federal counterpart, the Federal Coordinating Officer; State Disaster Assistance Centers; Federal/State Disaster Assistance Centers; Federal Disaster Field Offices; and the State Inter-Secretariat Emergency Coordinating Committee.

III. ORGANIZATION AND RESPONSIBILITIES

This section outlines the recovery responsibilities of the various levels of government, and of some of the key instrumentalities within them.

A. Local Governments

While Part Two deals primarily with State and Federal recovery assistance programs, the effectiveness of such programs will often depend upon the capability of each community to:

1. Identify recovery assistance needs;
2. Mobilize community resources for recovery planning (e.g. local and regional planning agencies, line agencies of local government, civic and volunteer organization);
3. Request State or Federal assistance, as appropriate, and comply with the administrative and procedural requirements associated with developing such requests;
4. Facilitate the delivery of recovery assistance to individuals by the State or Federal government, or by private relief organizations, through utilization of local resources (facilities and/or personnel);
5. Responsibly manage recovery assistance program funds, and comply with all State and Federal administrative and reporting requirements.

B. State Government

The general responsibility of State government, with respect to disaster recovery, is to provide, from among its own resources or through coordination with the Federal government, long-term relief assistance to individuals, and to help meet the technical assistance, capital, and physical infrastructure needs of communities and institutions.

The complexity and variability of these tasks demands, and the centralized Cabinet system organization of Massachusetts government permits, a flexible approach to disaster operations. Key institutional elements, and their responsibilities, include:

1. Governor

As Chief Executive Officer of the Commonwealth, and under the provisions of the Civil Defense Act (Chapter 639, Acts of 1950, as amended), the Governor is ultimately responsible for all recovery actions taken by the State.

Such responsibilities include:

a. Requesting Presidential declarations of emergency or disaster, and required Federal assistance;

b. Executing, on behalf of the Commonwealth, Federal-State Agreements for Emergency or Disaster; and amendments thereto.

2. State Coordinating Officer

The Secretary of Public Safety, as State Coodinating Officer (SCO), acts as principal assistant to the Governor in the coordination and supervision of the disaster assistance program, and acts in cooperation with the Federal Coordinating Officer (see below). SCO responsibilities include:

a. Implementing the provisions of this Plan, including both those involving disaster operations independent of Federal assistance, and those involving coordination with Federal assistance efforts;

b. Determining local needs for State disaster assistance;

c. Informing the Governor, and, as appropriate, other State officials, of the disaster situation, and recommending State action, including, where necessary, State requests for assistance;

d. Coordinating the application for, receipt of, and utilization of Federal assistance with the Federal Coordinating Officer (FCO), and other Federal officials;

e. Maintaining liaison with the Regional Director, ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA, and informing him of any situation likely to lead to a request for Federal assistance.

3. Governor's Authorized Representative

The Governor's Authorized Representative (GAR) is named by the Governor in the Federal-State Agreement (see Section V of this Part Two), to execute, on behalf of the State, all necessary documents for disaster assistance following the declaration of an emergency, or disaster. GAR responsibilities include:

a. Obtaining and documenting State and local commitment figures certified in the Governor's requests for Federal disaster or emergency assistance;

b. Acting as financial manager and grant processor for Federal disaster grant funds;

c. Assuring the development and implementation of effective procedures and provisions for administering State accounts for all Federal funds made available through the provisions of the Federal Disaster Relief Act;

d. Assuring the timely preparation and submission of required accounts, reports, and Federal-State Agreement amendments to the appropriate Federal authorities;

e. Notifying the State Coordinating Officer (SCO) and the Governor of the financial status of federally assisted State disaster operations, and making recommendations regarding appropriate State actions.

4. Inter-Secretariat Emergency Coordinating Committee

The Inter-Secretariat Emergency Coordinating Committee consists of one individual from each of the ten Cabinet-level

Secretariats and Departments, usually at the Under-Secretary or Assistant Secretary level, appointed by each Secretary. Committee responsibilities include:

a. Maintaining familiarity with this Plan, and associated disaster and emergency plans;

b. Maintaining familiarity with the potential disaster response functions of the various State agencies within each Secretariat;

c. Overseeing the development or completion of required agency-specific emergency plans within each Secretariat;

d. Advising the Secretary of Public Safety of potential or existing situations which call for emergency preparedness measures by the Commonwealth;

e. Recommending to the Governor, through the Secretary of Public Safety, the utilization of ad hoc inter-agency task forces to develop recommendations for recovery measures relative to specific disaster or emergency situations.

5. State Disaster Assistance Centers

State Disaster Assistance Centers (DACs) are established and managed by the Civil Defense Agency (MCDA), at or near the disaster site, utilizing personnel as needed from various State agencies.

One-stop DACs are intended to enable disaster victims to obtain the kinds of individual assistance they require as quickly and conveniently as possible.

a. Establishment

MCDA, working with State and local officials and representatives of private relief, business, charitable, or public service organizations and groups, may select one or more sites for a DAC immediately following a disaster.

If the disaster is widespread or if there are many victims need help over a large area, it may be necessary to establish more than one such center or to form mobile teams to bring one-stop disaster services to localities where they are urgently needed.

b. Staffing

As many State agency representatives as required to reflect the full range of State disaster services needed will be assigned to staff the DAC operation. These will include such State agencies as the Department of Public Welfare (emergency food, shelter, clothing, financial aid, and administration of general relief), the Department of Community Affairs (temporary housing), the Division of Employment Security (emergency unemployment), the Attorney General and Executive Office of Consumer Affairs (for legal aid, consumer protection), and the Department of Mental Health (crisis counseling). Other State agencies, such as the Insurance Commissioner (claims), will be included as required.

The Massachusetts Civil Defense Agency (MCDA) will also arrange, through its liaison with Red Cross, the Salvation Army, Catholic Charities, Seventh-Day Adventists, Mennonite Disaster Service, and others, for representatives of voluntary organizations to assist the Disaster Assistance Center (DAC). In addition,, MCDA may call upon such organizations as Scouts, Kiwanis, Rotary and Chambers of Commerce for DAC help as may be necessary. Full publicity as to location, hours of operation, and services will be arranged through newspapers, radio, television and outreach programs.

c. Federal Participation in State Disaster Assistance Centers (DACs)

Disaster victims may be need of services that Federal agencies are best equipped to provide. The DAC concept of delivery of disaster services is an integral part of Federal disaster assistance policy, and is well understood by Federal officials. When such needs as, for example, aid from the Small Business Administration (SBA) or the Post Office exist, the Massachusetts Civil Defense Agency (MCDA) will arrange for Federal agency representation in the DAC. (Following a Presidential declaration of Emergency or Major Disaster, Federal-State DACs are established, through the coordination of the Federal Emergency Management Agency (FEMA). These are described on p. 11 of this Part Two.)

C. Federal

The Disaster Relief Act of 1974 authorizes the Federal Emergency Management Agency (FEMA) to coordinate the activities of Federal agencies in providing disaster assistance, and to direct any Federal agency to utilize its available personnel, supplies, facilities, and other resources in providing such assistance as a result of a major disaster or emergency determination.

Key elements of the field organization assembled by FEMA and associated responsibilities, are described below:

1. FEMA Regional Director

FEMA Maintains a Regional Office serving New England at 442 McCormack (POCH), Boston, MA. The Regional is headed by a Regional Director whose responsibilities include the following: 1

a. Contacting the State Agency responsible for disaster assistance and local officials to coordinate activities and obtain information needed to evaluate a Governor's request for the declaration of a major disaster or emergency.

b. Assigning and deploying Regional Office representatives to the affected disaster areas to establish temporary field offices or to perform damage assessments or surveys:

c. Alerting Federal agencies for participation if required;

d. Requesting Federal disaster damage assessments if required;

e. Directing and coordinating the disaster assistance activities of Federal agencies;

f. Ensuring that Federal disaster assistance supplements, not substitutes for, assistance afforded by State, local, and private agencies.

2. Federal Coordinating Officer (FCO)

The Federal Coordinating Officer (FCO) is appointed by the Administrator of the Federal Disaster Assistance Administration (FDAA) for each major disaster. FCO responsibilities include:

a. Making an initial appraisal of the types of assistance most urgently needed;

b. Rendering Federal disaster assistance as expeditiously as possible;

c. Bringing together all Federal agencies having disaster assistance programs and coordinating their activities;

d. Establishing field offices at the disaster scene, with the required representation by Federal agency personnel;

e. Coordinating the efforts of private relief organizations, such as the Red Cross, that agree to operate under his supervision;

f. Taking any other appropriate action to help local citizens and public officials obtain the assistance to which they are entitled.

3. Field Offices

After the President has declared a major disaster or an emergency, the ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA may establish temporary field offices within the affected area. These offices are under the supervision of the Federal Coordinating Officer (FCO) and are staffed with representatives of appropriate Federal agencies. The location of these offices will be closely coordinated with the State Coordinating Officer (Secretary of Public Safety). State and Federal Coordinating Officers may co-locate their disaster field office operations. These field personnel, in addition to providing prompt assistance to disaster victims, are responsible for advising the State on Federal project eligibility and on project applications, including the timely completion of accurate damage survey reports.

4. Federal-State Disaster Assistance Centers

When a Presidential declaration has been issued and Federal disaster assistance becomes available to the State in accordance with the provisions of the Disaster Relief Act of 1974 (P.L. 93-288), the State Disaster Assistance Center (DAC), described under "B" above, becomes a Federal-State partnership under the direction and management of the Federal government. State and local agencies and private relief organizations are joined by an array of Federal agencies, such as: Farmers Home Administration; Health, Education, and Welfare; Housing and Urban Development; Small Business Administration; and the Internal Revenue Service. The Individual and Family Grant program (Section 408 of P.L. 93-288) may become available and the State Department of Public Welfare may be called upon to administer this joint Federal-State program of grant assistance for necessary expenses and serious needs stemming from the disaster (see TAB F of this Part Two).

In any disaster requiring State aid to individuals and families, the "one-stop" Disaster Assistance Center (or Centers) is the basic method for delivering such aid. It becomes a joint Federal-State operation, through coordination between the Federal Coordinating Officer (FCO) and the State Coordinating Officer (SCO), when there has been a Presidential declaration.

D. Private Relief Organizations

An essential element of almost any disaster relief effort is the assistance provided by private relief organizations in the distribution of food, medicine, and supplies; the provision of emergency shelter; and the restoration of community services. The American National Red Cross, which operates under a Federal Charter (as provided by P.L. 58-4, approved January 5, 1905, 33 Stat. 599), provides grants and other types of assistance to individuals and families in disasters to meet their emergency needs. The Salvation Army, the Mennonite Disaster Service, and other charitable organizations and church groups also provide significant assistance to those in need of help. (See Annex H to this Plan.)

IV. FEDERAL ASSISTANCE PROGRAMS

A. Nature of Federal Assistance

Federal disaster assistance is intended to supplement, but not be a substitute for, that provided by cities or towns, or by the State.

Generally, such assistance can be described as: 1) assistance from Federal agencies without a Presidential declaration of emergency or disaster; 2) assistance resulting from a Presidential declaration of Emergency, or, 3) assistance resulting from a Presidential Major Disaster declaration. Such assistance is described below.

B. Assistance Without a Presidential Declaration

In many instances, disaster assistance may be obtained from the Federal government without a Presidential declaration of a major disaster or an emergency. Such assistance is catalogued in a Digest of Federal Disaster Assistance Programs, published by the Federal Disaster Assistance Administration (FDAA) and available at their Boston Regional Office. The following are examples of the kinds of assistance available from various Federal agencies.

1. Search and Rescue

The U.S. Coast Guard can assist in search and rescue operations, evacuate disaster victims, and transport supplies and equipment.

2. Flood Protection

The U.S. Army Corps of Engineers exercises certain authorities relative to flood control, preparedness, protection and restoration which are described in Attachment 2 of Part One of this Plan, Hazard Specific Supplement No. 1.

3. Fire Suppression Assistance

The Disaster Relief Act of 1974, authorizes the President to provide assistance, including grants, equipment, supplies, and personnel to a State for the suppression of a forest or grassland fire on public or private lands that threatens to become a major disaster. This authority has been delegated to the Administrator of the ~~Federal Disaster Assistance Administration (FDAA)~~. The Governor of a State must request such assistance through the FDAA Regional Director and should support his request with detailed information on the nature of the threat and the need for Federal assistance.

FEMA

4. Health and Welfare

The Department of Health, Education, and Welfare can provide assistance to State and local welfare agencies and to State vocational rehabilitation agencies. The Public Health Service can aid States and local communities in emergency health and sanitation measures. The Food and Drug Administration can work with State and local governments in establishing public health controls through the decontamination or condemnation of contaminated food and drugs.

5. Emergency Conservation Measures

The county and State ASCS Committees may designate areas eligible for the Emergency Conservation Measures program of the Agricultural Stabilization and Conservation Service. This program provides for payments of up to 80 percent of the cost to rehabilitate farm lands damaged by natural disasters.

6. Emergency Loans for Agriculture

In areas designated as eligible by the Secretary of Agriculture under his own statutory authorities, the Farmers Home Administration may make emergency loans to farmers, ranchers, and oyster planters.

7. Disaster Loans for Homeowners and Businesses

The Small Business Administration can provide both direct and bank-participation disaster loans to qualified homeowners and businesses to repair or replace damaged or destroyed private property when the SBA Administrator declares a "disaster loan area" under his own statutory authority. SBA economic injury loans can help small firms suffering economic losses as a result of a disaster.

8. Repairs to Federal Aid System Roads

The Federal Highway Administration, Department of Transportation, can provide assistance in a widespread disaster to restore roads and bridges on the Federal Aid System.

9. Tax Refund

The Internal Revenue Service can assist certain eligible individuals in obtaining tax refunds for uncompensated losses resulting from natural disasters.

C. Assistance Available with a Presidential Major Disaster Declaration

The President may, at the request of the Governor, declare all or part of the State a Major Disaster Area, in accordance with the provisions of the Federal Disaster Relief Act of 1974 (P.L. 93-288).

As soon as possible following the President's action, the Administrator of the ~~Federal Disaster Assistance Administration~~ FEMA (FDAA), based on the Governor's request, designates those counties or other political subdivisions eligible for assistance.

The broad range of Federal disaster assistance available following a Presidential declaration of a major disaster, can generally be divided into that available to individuals and that available to local governments.

1. Assistance to Individuals

Assistance available to individual victims of disaster may include:

a. Temporary housing for disaster victims whose homes are uninhabitable until other housing resources are available. No rental is charged for up to 12 months of occupancy;

b. Minimum essential repairs to owner-occupied residences in lieu of other types of temporary housing resources, so that families can return quickly to their damaged homes;

c. Temporary assistance with mortgage or rental payments for persons faced with loss of their residences because of disaster-created financial hardship for a period not to exceed 12 months;

d. Disaster unemployment assistance and job placement assistance for those unemployed as a result of a major disaster;

e. Disaster loans to individuals, businesses, and farmers for refinancing, repair, rehabilitation, or replacement of damaged real and personal property not fully covered by insurance;

f. Agricultural assistance, including technical assistance; payments of up to 80% of the cost to eligible farmers who perform emergency conservation measures on farmland damaged by the disaster; and donation of federally-owned feed grain for commingled livestock and herd preservation;

h. Distribution of food coupons to eligible disaster victims;

i. Individual and family grants of up to $5,000 to meet disaster-related necessary expenses or serious needs of those adversely affected by a major disasaster when they are unable to meet such expenses or needs through other programs or other means;

j. Legal services to low-income families and individuals;

k. Consumer counseling and assistance in obtaining insurance benefits;

l. Crisis counseling and referrals to appropriate mental health agencies to relieve disaster caused mental health problems.

2. Assistance to State and Local Governments

States, cities or towns, Indian tribes, or, under certain circumstances, non-profit institutions may submit project applications to the Federal government for the funding of a variety of projects, which may include:

a. Clearance of debris on public or private lands or waters;

b. Emergency protective measures for the preservation of life and property;

c. Repair or replacement of roads, streets, and bridges;

d. Repair or replacement of water control facilities (dikes, levees, irrigation works, and drainage facilities);

e. Repair or replacement of public buildings and related equipment;

f. Repair or replacement of public utilities;

g. Repair or restoration to predisaster condition of public facilities damaged while under construction;

h. Repair or restoration of recreational facilities and parks;

i. Repair or replacement of private nonprofit educational, utility, emergency, medical, and custodial care facilities, including those for the aged or disabled, and facilities on Indian reservations;

j. Disaster loans from the ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA to those communities that may suffer a substantial loss of tax and other revenues and have demonstrated a need for financial assistance in order to perform their governmental functions;

k. Repairs and operating assistance to public elementary and secondary schools by the Office of Education, U.S. Department of Health, Education, and Welfare; and

1. Use of Federal equipment, supplies, facilities, personnel, and other resources (other than the extension of credit) from various Federal agencies.

Federal major disaster assistance available under key provisions of the Federal Disaster Relief Act of 1974 (P.L. 93-288) is further described in TABS B-M of this Part Two.

D. Assistance Available with a Presidential Emergency Declaration

Assistance which may be provided under a Presidential declaration of an emergency is more limited in scope than that which may be made available under a major disaster declaration. It is specialized assistance to meet a specific need and is generally limited to those actions which may be required to save lives and protect property, public health and safety or to lessen the threat of a more severe disaster. Examples of emergency assistance are:

1. Emergency mass care, such as emergency shelter, emergency provision of food, water and medicine, and emergency medical care;

2. Clearance of debris to save lives and protect property and public health and safety;

3. Emergency protective measures, including search and rescue, demolition of unsafe structures; warning of further risks and hazards; public information on health and safety measures; and other actions necessary to remove or to reduce immediate threats to public health and safety, to public property, or to private property when in the public interest;

4. Emergency communications support to State and local government officials; and

5. Emergency repairs to essential utilities and facilities as necessary to provide for their continued operation.

In general, in a declared emergency the President is authorized by law to direct any Federal agency, with or without reimbursement, to utilize all available personnel, equipment, supplies, facilities, and other resources, including managerial and technical services, in support of local and State emergency assistance efforts. Federal assistance available following a Presidential emergency declaration is summarized in TAB A of this Part Two.

V. REQUESTS FOR FEDERAL ASSISTANCE

The procedural requirements associated with requests for Federal assistance vary with the nature of the assistance needed, and the program authority through which it is available.

Request procedures which can be generalized are described in this Section.

A. Assistance with a Presidential Declaration

1. Initiation

When the Governor decides to request the President to declare a major disaster, the Secretary of Public Safety in conjunction with the Massachusetts Civil Defense Agency (MCDA), and other State and local officials, will:

--survey the affected areas (jointly with the ~~Federal Disaster Assistance Administration (FDAA~~ FEMA) regional disaster specialists, if possible) to determine the extent of public, private and agriculture damage;

--estimate types and extent of Federal disaster assistance required;

--consult with ~~FDAA~~ FEMA Regional Director on the eligibility criteria for Federal disaster assistance;

--advise ~~FDAA~~ FEMA Regional Office of State's intention to request an Emergency or Major Disaster declaration.

The Governor may rely upon intelligence gathered by the Massachusetts Civil Defense Agency (MCDA) or other government officials, but must himself originate the formal request. His request must adhere to the following criteria:

--be based on a finding that the severity and magnitude of the situation is such that effective response is beyond the capability of the State and affected local governments, and that Federal assistance is necessary;

--contain a certification by the Governor of a reasonable expenditure of State and local funds for disaster relief, and an estimate of the extent and nature of Federal assistance required for each affected county and the State;

--indicate that appropriate action under State law has been taken, and that the State emergency plan (this Plan) has been executed.

The Governor sends the completed request, addressed to the President, to the FEMA ~~FDAA~~ Regional Director, Region I, where it is evaluated and forwarded through the Secretary of the Department of Housing and Urban Development (HUD) to the President with a recommendation for a course of action.

2. Execution

Upon his declaration of a Major Disaster, the President appoints a Federal Coordinating Officer (FCO) to operate in the affected area. The responsibilities of the FCO are described in this Part Two, under "Organization and Responsibilities," and include joining the Governor in executing a Federal-State Agreement for Major Disaster which prescribes the manner in which Federal aid under Public Law 93-288 is to be made available. The Agreement lists the areas within the State eligible for assistance and specifies the incidence period which is officially recognized as the duration of the disaster.

Provision of Federal assistance under Public Law 93-288 is the responsibility of the ~~Federal Disaster Assistance~~ FEMA ~~Administration (FDAA)~~, and is administered by the FDAA Regional Director, Region I, at Boston.

3. Requests for Emergency Declaration

In certain instances, the full range of assistance available with a Major Disaster declaration may not be required. In such cases, the Governor may decide to request a declaration by the President of an "emergency", which would provide specialized assistance to meet a specific need that the Federal government is uniquely able to provide. As with the request for a major disaster declaration, the Governor's request should contain specific information describing State and local efforts and resources used to alleviate the situation and a description of the exact type of Federal assistance requested. The procedures for requesting and declaring an emergency are similar to those for major disaster declarations.

A continuing Federal-State Agreement for Emergencies has been executed by the ~~Federal Disaster Assistance Administration~~ FEMA (FDAA) and the Commonwealth. This Agreement outlines the procedures for requesting an emergency declaration, and specifies the kinds of information to be included in the Governor's request.

In the event of a Presidential Emergency Declaration, an Amendment to this existing Agreement is executed, which does the following:

--specifies the areas eligible for Federal assistance and the period during which they are eligible;

--identifies the specific Federal assistance to be made available; and,

--designates the Governor's Authorized Representative (GAR). The GAR, usually the State Director of Civil Defense but also including such members of the Civil Defense staff as the Director deems appropriate, executes on the State's behalf all documents necessary to disaster assistance following a Presidential declaration.

B. Federal Aid without a Disaster Declaration

Assistance provided by Federal agencies under their own statutory authorities is generally of two types: 1) assistance to individuals and private businesses; or, 2) assistance to local governments.

1. Individuals and Private Businesses

Assistance provided to the private sector is available directly from the appropriate Federal agency. The Massachusetts Civil Defense Agency (MCDA) does not coordinate that assistance. However, an agency representative can assist private citizens in identifying appropriate Federal programs.

It is the responsibility of the individual applicant to be aware of the requirements, regulations and application procedures for each program. That information is available from either the Catalog of Federal Assistance or the specific Federal agency. Application procedures generally include:

a. Pre-application coordination by the Federal agency;

b. Application review under the procedures established in Part I of the Office of Management and Budget Circular A-95;

c. An Environmental assessment and possible Environmental Impact Statement.

2. Local Governments

The Massachusetts Civil Defense Agency (MCDA) will monitor all potential and actual disaster situations and will help local governments to identify those Federal programs which may be of assistance. Application procedures and requirements vary from program to program, and are dependent upon the type and nature of the assistance requested.

C. Federal Aid with Agency Disaster Declarations

Federal assistance provided under "Agency Disaster Declarations" is coordinated by the Secretary of Public Safety through the Massachusetts Civil Defense Agency (MCDA) and is a response to a detailed request for specific assistance. All requests for agency declarations originate with the affected communities and are submitted by the Governor (or his designated representative) to the appropriate Federal agency. The agency then determines whether the situation necessitates a declaration. If so, a declaration is issued, and assistance is made available directly from the Federal agency to the locality or other eligible applicant. A brief description of specific agency procedures and requirements follows:

1. Small Business Administration (SBA)

a. To obtain a Small Business Administration (SBA) disaster declaration, the Governor submits a report to the SBA Administrator which details:

- --the nature of the disaster;
- --the period during which the disaster occurred;
- --the location of the damages by county and/or community;
- --the number and type of businesses affected;
- --an estimate of the damages to the businesses affected, and an estimate of the resultant unemployment;
- --the types of assistance necessary.

b. The Small Business Administration (SBA) has established criteria for issuing a disaster declaration. These are:

--At least 25 homes or five businesses, or a combination of at least 25 eligibles in any county or other political subdivision collectively have sustained uninsured loss averaging 25 percent or more of their estimated fair replacement value; or

--At least three businesses have sustained uninsured loss averaging 25 percent or more of their estimated fair replacement value and as a result, 25 percent of the work force in the community would be unemployed for at least 90 days as a result of the physical damage; or

--At least 200 homes or 40 business concerns or a combination of 200 eligibles in any county or other political subdivision collectively have suffered any loss as a direct result of any physical type disaster.

2. Department of Agriculture

a. In order to obtain a Department of Agriculture (USDA) Disaster Declaration, the Governor (or his authorized representative) submits a letter to the Secretary of Agriculture which details:

- --the nature of the disaster;
- --the incidence period of the disaster;
- --the affected counties;
- --the type of assistance requested.

This letter must be supported by estimates of the damage. The latter are ordinarily obtained from the Massachusetts Department of Agriculture.

b. Specific procedures and requirements associated with the USDA Emergency Loan Program are explained below:

(1) The Secretary of Agriculture may designate a county as an Emergency Loan area when:

--Unusual and adverse weather conditions have resulted in severe production losses and/or losses to livestock, farm machinery, farmlands, or buildings, and aquaculture operations;

--A natural disaster has substantially affected farming, ranching, and aquaculture operations and more than 25 farmers have been affected;

--The request for a designation has been made within 3 months from the last day of the occurrence of the natural disaster; and

--A formal request for a designation has been received from the Governor. (A copy of the Governor's request should be sent to the Farmers' Home Administration (FmHA) State Director.)

(2) The Director, FmHA, may authorize such loans on behalf of the Secretary of Agriculture in the event 25 or fewer farmers have been affected in any particular county without a request from the Governor, provided all other requirements are met.

3. Department of Health, Education and Welfare

a. Local educational agencies requiring disaster loss related financial assistance must ask the Governor, through the State education agency, to present a request for funds to the U.S. Commissioner of Education.

b. The Governor must submit:

- --A statement of need;
- --Certification that a reasonable amount of State and local funds have been made available;
- --Date and cause of the disaster;
- --An estimate of the damage;
- --Assurance that the school district maintained full insurance coverage on the damaged facilities;
- --A statement by the State Attorney General that the local education agency has the authority to conclude a loan with the Federal government.

4. Federal Highway Administration (FHWA)

a. In order to apply for Emergency relief funds as provided in Section 125, Title 23, USC, the Commissioner, Department of Public Works, must send to the Federal Highway Administrator through the FHWA Division Administrator:

(1) A letter of intent which serves as a notice that emergency funds will be sought;

(2) A formal application which includes:

--The Governor's proclamation that an emergency exists and a request for FHWA assistance, or a copy of the Governor's request for a Presidential declaration under P.L. 93-288; and

--Information on the natural disaster or catastrophic failure

b. The application must show that serious damage has occurred to Federal-aid system roads, and should reflect the gravity of the situation.

c. In order for the Federal share of any repair or reconstruction to exceed 70 percent, the Federal Highway Administration (FHWA) Regional Administrator must send a separate letter to the FHWA Administrator which shows that the greater funding is in the public interest because of current economic conditions.

VI. MANAGEMENT AND ADMINISTRATION OF FEDERAL ASSISTANCE

The acceptance of Federal financial recovery assistance involves compliance with certain Federal requirements which are described in detail in Handbooks published by the ~~Federal Disaster Assistance~~ Administration (FDAA). FEMA.

General requirements, and those associated with public assistance programs of the Federal Disaster Relief Act, which involve the assignment of administrative responsibility to State agencies, are outlined below.

A. General

Included among the responsibilities associated with the receipt of Federal financial assistance for recovery are the following:

- --the obligation for the proper accounting of funds;
- --the agreement to allow for audit and examination of any books, documents, papers and records that pertain to Federal funds;
- --the assurance to comply with non-discrimination regulations;
- --the assurance to comply with Environmental Protection regulations;
- --the assurance that, in the expenditure of Federal funds, local firms shall be given preference;
- --the assurance that all Insurance requirements will be met;
- --the assurance that all repairs and reconstruction will be performed in accordance with applicable codes, specifications and standards.

1. Protection of the Environment and Historic Properties

a. Any action taken or assistance provided by the Federal government, which significantly affects the quality of the environment, requires the preparation of an Environmental Impact Statement.

b. The Massachusetts Department of Environmental Quality Engineering has the responsibility for ensuring compliance with environmental clearance provisions.

c. Those State agencies which have a direct responsibility for managing a specific Federal program, also assume the environmental review responsibility for that program.

2. Insurance Requirements

a. The Flood Disaster Protection Act imposes certain restrictions on the approval of Federal financial assistance. The Massachusetts Civil Defense Agency (MCDA) has the responsibility to assist communities in complying with those regulations.

b. The Commissioner of Insurance has the responsibility for obtaining approval of any established State self-insurance program.

c. The Commissioner of Insurance promulgates regulations which govern reasonably available, adequate, and necessary insurance coverage for damaged community facilities.

3. Non-Discrimination in Disaster Assistance

a. The Massachusetts Commission Against Discrimination has the responsibility for ensuring that disaster relief will be administered without regard to race, religion, color, sex, age, economic status or national origin.

b. The Massachusetts Department of the Attorney General has the responsibility for establishing procedures to ensure cases of discrimination are investigated and, if necessary, prosecuted.

B. Public Assistance

Public assistance provided under a Presidential major disaster declaration will be administered, at the State level, by the Governor's Authorized Representative (GAR), whose responsibilities are described in Section III of this Part Two. The management requirements for requesting and utilizing such assistance include, but are not limited to, the following:

1. Submission of Project Applications

a. In order to submit an application, the Governor's Authorized Representative (GAR) must obtain from the applicant:

--Notice of Interest forms;
--Designation of Applicant's Agent;

--Completed Damage Survey Reports;
--Applicant's funding option;
--Applicant's insurance certification.

b. The Governor's Authorized Representative (GAR), after reviewing the Project Application to ensure its completeness and consistency with respect to the ~~Federal Disaster Assistance Administrat~~ion ~~(FDAA~~) regulations, submits it to the FDAA Regional Office. FEMA

2. Management of Approved Applications

a. The Governor's Authorized Representative (GAR) will assist applicants in the following areas:

--Supporting and substantiating applicant appeals;
--Requesting resurveys, when necessary;
--Forwarding Advance of Funds and Partial Payment requests and distributing approved funds;
--Advising applicants of contractors who are on the HUD list of Debarred, Suspended and Ineligible Contractors.

b. The GAR will ensure the timely completion of Project Applications by:

--Informing applicants of time limitations;
--Organizing interim and final inspections;
--Coordinating the performance of State Audits.

c. The Federal financial assistance received under Emergency and Major Disaster Declarations will be channeled through the Massachusetts Civil Defense Agency (MCDA), and the funds then transferred to the Executive Office of Administration and Finance. The latter has the responsibility for the proper accounting and distribution of such funds.

d. The Bureau of Accounts (Department of Revenue) has the responsibility to perform audits as requested by the Governor's Authorized Representative (GAR) or the Massachusetts Civil Defense Agency (MCDA).

TAB A

EMERGENCY ASSISTANCE

Program description

In an emergency, the President may provide assistance to save lives and to protect property and public health and safety. Federal emergency assistance may be in the form of technical assistance and advisory personnel to the affected State to assist State and local governments in emergency mass care, emergency debris clearance, emergency restorative work, and emergency communications.

References

Section 305, Public Law 93-288, Disaster Relief Act of 1974.

Responsibilities

The Governor may request Federal emergency assistance when the severity or magnitude of a disaster is such that effective response is beyond the capability of the State and affected local governments and emergency assistance is required to save lives, and protect property, health and safety or to avert or lessen the threat of a disaster.

The Secretary of Public Safety, as the State Coordinating Officer (SCO), is responsible for coordinating State and local disaster assistance efforts with the Federal government.

Procedures

1. The State Coordinating Officer (SCO) and his staff will furnish information to the Governor describing State and local efforts and resources which have been or will be used to alleviate the emergency, including that for which no Federal funding will be requested, and will define the particular type and specific extent of Federal aid required.

2. Using this information, the Governor will make a request for emergency assistance to the President, through the ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA Regional Director.

3. Upon determination that an emergency exists which warrants Federal assistance, the Administrator, ~~FDAA~~ FEMA, will immediately initiate action to provide Federal assistance under such determination and in accordance with applicable laws and regulations and the Federal-State Agreement for Emergencies.

TAB B

DAMAGED FACILITIES

Program description

The President may authorize Federal assistance to State and local governments for repair, restoration, reconstruction, or replacement of public facilities or private non-profit educational, utility, emergency, medical, and custodial care facilities, including those for the aged or disabled, and facilities on Indian reservations.

References

Sections 306, 314, 402, & 419, P.L. 93-288, Disaster Relief Act of 1974.

Section 2205.54, Title 24, HUD Code of Federal Regulations, May, 1975.

HUD Handbook 3300.5 Rev., Handbook for Applicants, December, 1975.

HUD Handbook 3300.6, Eligibility Handbook under Public Law 93-288, December, 1974.

Responsibilities

Within the major disaster area designated by the ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA Administrator, any State or local government, or any Indian tribe or authorized tribal organization are eligible for assistance.

The Massachusetts Civil Defense Agency (MCDA), on behalf of the Commonwealth, has responsibility for administering the damaged facilities program.

Procedures

1. An eligible applicant must submit a project application through the Governor's authorized representative, to the Region I Office of the FEMA ~~Federal Disaster Assistance Administration (FDAA)~~. The application must be accompanied by detailed Damage Survey Reports and other required documentation.

2. As soon as possible following a Presidential declaration of an emergency or major disaster, the State Coordinating Officer (Secretary of Public Safety), with the Federal Coordinating Officer (FCO) and his staff, will conduct briefings and conferences to orient eligible applicants to the Federal assistance program. Applicants are given instructions for completing the necessary forms and documents.

TAB C

DEBRIS REMOVAL

Program description

Use of Federal agencies or grants to State and local governments for the removal of debris and wreckage resulting from a major disaster from publicly and privately owned lands and waters when determined to be in the public interest.

References

Sections 306 and 403, Public Law 93-288, Disaster Relief Act of 1974.

Executive Order 11795.

Section 2205.55, Title 24, HUD Code of Federal Regulations, May, 1975.

Responsibilities

State and local governments and individuals whose property is located in a major disaster area are eligible to apply for Federal assistance in debris removal.

The Massachusetts Civil Defense Agency (MCDA) has the responsibility of administering this program on behalf of the State.

State and local governments are responsible for ensuring that debris removal assistance provided by Federal agencies and public assistance programs are not duplicated.

Procedures

1. The State, or local governments, may request through the Massachusetts Civil Defense Agency (MCDA), direct Federal agency assistance in emergency debris clearance. Such requests are directed through the Executive Office of Public Safety to the Regional Director, FEMA ~~Federal Disaster Assistance Administration (FDAA)~~, who is authorized to provide such assistance to save lives and protect property and public health and safety.

2. Affected State or local governments shall first arrange an unconditional authorization for removal of such debris or wreckage from public and private property, and shall agree to indemnify the Federal government against any claim arising from such removal.

3. Following a major disaster declaration, the Federal Coordinating Officer (FCO), whenever he determines it to be in the public interest, is authorized to provide for debris clearance either through the use of Federal agencies, or through reimbursement of State or local governments involved.

[See Annex C - Debris Clearance, and Part Two, "Requests for Federal Assistance" for detailed procedures]

TAB D

TEMPORARY HOUSING

Program description

The purpose of the temporary housing assistance program is to provide temporary housing for individuals and families displaced as a result of a disaster.

References

Section 404, P.L. 93-288, Disaster Relief Act of 1974.

Section 2205.45 & 2205.46, Title 24, HUD Code of Federal Regulations, May, 1975.

Responsibilities

Individuals and families displaced from their homes by a disaster are eligible to apply for temporary housing assistance.

The Department of Community Affairs, on behalf of the State, will assist the U.S. Department of Housing and Urban Development in meeting temporary housing needs in a disaster area by coordinating State and local temporary housing operations with those of the Federal government.

Procedures

Those eligible must apply through HUD Field Offices or Disaster Assistance Centers (DACs).

TAB E

UNEMPLOYMENT ASSISTANCE

Program description

Unemployment assistance is available to provide financial aid to persons unemployed as a result of a major disaster. Assistance may be available in the form of job placement and disaster unemployment assistance and may be provided until an individual is re-employed, but no longer than one year after the major disaster is declared.

References

Section 407, P.L. 93-288, Disaster Relief Act of 1974.

Section 2205.47, Title 24, HUD Code of Federal Regulations, May, 1975.

Responsibilities

Individuals who are unemployed as a result of a major disaster declared by the President are eligible to apply for disaster unemployment assistance. Self-employed individuals, not eligible under regular unemployment assistance, may apply for disaster unemployment assistance.

Job placement and disaster unemployment assistance are administered through the Massachusetts Division of Employment Security by the U.S. Department of Labor.

Procedures

Eligible applicants must make their requests to the Massachusetts Division of Employment Security.

TAB F

INDIVIDUAL AND FAMILY GRANTS

Program description

The Individual and Family Grant Program (see Appendix 2 to this Plan) provides grants of up to $5,000 to meet disaster-related necessary expenses or serious needs of individuals or families adversely affected by a major disaster.

References

Section 408, P.L. 93-288, Disaster Relief Act of 1974.

Section 2205.48, Title 24, HUD Code of Federal Regulations, May, 1975.

Responsibilities

Individuals and families with disaster-related necessary expenses or serious needs which cannot be met through assistance under other provisions of P.L. 93-288 or from other means are eligible to apply for a grant.

The Massachusetts Department of Public Welfare has responsibility for administration of the grant.

The Secretary of Public Safety, as the State Coordinating Officer (SCO), and the Federal Coordinating Officer (FCO) are responsible for establishing Disaster Assistance Centers (DACs) where information on eligibility and application procedures is available.

Procedures

Those eligible must file their applications for grants with the Department of Public Welfare at Disaster Assistance Centers (DACs), and after their closing, in the Department of Public Welfare's offices for a 60-day period after the disaster declaration.

TAB G

FOOD STAMPS

Program description

The U.S. Department of Agriculture's Emergency Food Stamp Program provides free food stamps to insure that adequate amounts of nutritious food are available to victims of a major disaster declared by the President.

This program is separate and distinct from the regular food stamp program, and is administered only in those counties which have been declared a major disaster area.

[Note: The regular food stamp program may also be adapted for use in disasters with special "hardship provisions" for determining eligibility. Food stamps provided under the regular program may not always be free.]

References

Section 409, P.L. 93-288, Disaster Relief Act of 1974.

Food Stamp Act of 1964, as amended.

Executive Order 11795 (Presidential).

Responsibilities

Victims of a major disaster declared by the President are eligible to apply under the Emergency Food Stamp Program. It is the responsibility of the Massachusetts Department of Public Welfare to administer this Program on behalf of the State.

Procedures

Eligible applicants for food stamps will contact the Department of Public Welfare at either Disaster Assistance Centers or local welfare offices.

TAB H

FOOD COMMODITIES

Program description

Food commodities for disaster victims are authorized to assure that adequate food stocks will be ready and available for emergency mass feeding or distribution in a disaster area.

References

Section 410, P.L. 93-288, Disaster Relief Act of 1974.

Section 2205.49, Title 24, HUD Code of Federal Regulations, May, 1975.

Responsibilities

Federal food commodities for mass feeding of disaster victims are available to local, State and voluntary agencies whose capabilities are insufficient.

The Massachusetts Department of Education will be responsible for administrating this program on behalf of the State.

Procedures

Requests for Federal assistance are made by the Governor through the ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA Region I Office after a reasonable commitment of State and other available resources.

TAB I

LEGAL SERVICES

Program description

Legal services are available from Federal agencies. State and local bar associations, and the Young Lawyers Section of the American Bar Association to provide assistance to low-income individuals who require legal services as a result of a major disaster.

References

Section 412, Public Law 93-288, Disaster Relief Act of 1974.

Executive Order 11795 (Presidential).

Responsibilities

Low-income individuals affected by a major disaster who require legal services are eligible.

The Massachusetts Attorney General has the responsibility of providing legal assistance to those eligible, or arranging for such assistance through the Massachusetts Bar Association.

Procedures

1. When a major disaster is declared, legal service provided by the Young Lawyers Section of the American Bar Association will be available at a Federal Disaster Assistance Center pursuant to an agreement with the Federal Disaster Assistance Administration.

2. Legal service shall be provided with the advice and assistance of appropriate State and local bar associations.

TAB J

CRISIS COUNSELING

Program description

Crisis counseling assistance is available through the National Institute of Mental Health, funded by the ~~Federal Disaster Assistance Administration~~, FEMA to victims of major disaster in order to relieve mental health problems caused or aggravated by such major disaster or its aftermath. Assistance may also include training of disaster workers at the State and local level.

References

Section 413, P.L. 93-288, Disaster Relief Act of 1974.

Executive Order 11795 (Presidential).

Responsibilities

Any disaster victim in the designated area is eligible for crisis counseling assistance.

The Massachusetts Department of Mental Health has responsibility for administering such assistance on the State's behalf.

Procedures

1. Application by the State for crisis counseling assistance is made by the Secretary of Public Safety, as State Coordinating Officer (SCO), upon request from the Department of Mental Health. Such requests are directed to the Director, ~~Federal Disaster Assistance Administration (FDA~~A) FEMA, and must be received no later than 60 days following the disaster declaration.

2. The request should include a description of the geographic area to be served; an estimate of the number of victims who may require counseling; the kinds of emotional and mental health problems likely to be encountered; the local/State mental health resources available for use; and an estimate of the length of time for which mental health crisis counseling service will be required.

TAB K

COMMUNITY DISASTER LOANS

Program description

Community disaster loans are available to any local government which has suffered a substantial loss of tax and other revenue as a result of major disaster, and has demonstrated a need for financial assistance in order to carry on existing governmental functions or to expand such existing functions to meet disaster-related needs.

References

Section 414, Public Law 93-288, Disaster Relief Act of 1974.

Section 2205.56, Title 24, HUD Code of Federal Regulations, May, 1975.

Responsibilities

Any local government which has demonstrated a need for financial assistance as a result of a major disaster is eligible to apply for a community disaster loan.

The Governor's Authorized Representative is responsible for receiving, reviewing, and submitting requests for community loans on behalf of local governments to the Federal Disaster Assistance Administration (FDAA).

Procedures

Local government prepares and submits a loan request through the Governor or his Authorized Representative to the FDAA Regional Director.

TAB L

EMERGENCY COMMUNICATIONS

Program description

Temporary emergency communications facilities are made available during or in anticipation of emergency or disaster by the ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA. Such facilities may be made available to State and local officials or others deemed appropriate by the FDAA Regional Director, or, following a Presidential major disaster declaration, by the Federal Coordinating Officer.

References

Section 415, P.L. 93-288, Disaster Relief Act of 1974.

Executive Order 11795 (Presidential).

Responsibilities

Federal, State and local government officials and other persons deemed appropriate are eligible to apply for temporary emergency communications facilities.

The Massachusetts Civil Defense Agency (MCDA) is responsible for evaluating communication needs of the State and local governments, and advising the Executive Office of Public Safety of those needs.

Procedures

FEMA

Emergency communications assistance may be requested by the Governor, whose request is directed either to the ~~FDAA~~ Regional Director, or, in the context of a request to the President for a Declaration of Emergency, to the President. (See Part Two, "Requests for Federal Assistance.")

EMERGENCY PUBLIC TRANSPORTATION

Program description

Public transportation to governmental offices, supply centers, stores, post offices, schools, major employment centers, and such other places as may be necessary is available to meet emergency needs when such services have been severely disrupted because of a major disaster. This assistance is intended supplement normal transportation facilities that remain in operation after a major disaster.

References

Section 416, P.L. 93-288, Disaster Relief Act of 1974.

Section 2205.53, Title 24, HUD Code of Federal Regulations, May, 1975.

Responsibilities

Local governments are responsible for assessing emergency public transportation needs, and for initiating request for assistance, when necessary.

The Massachusetts Civil Defense Agency (MCDA) is responsible for evaluating such requests, and recommending action to the Governor's Authorized Representative.

Procedures

The Governor's Authorized Representative receives, evaluates and submits requests for emergency transportation assistance to the ~~Federal Disaster Assistance Administration (FDAA)~~. (See Part Two, "Requests for Federal Assistance.") FEMA

TAB N

FIRE SUPPRESSION

Program description

Fire suppression assistance, including grants, equipment, supplies, and personnel, is provided through the ~~Federal Disaster Assistance Administration~~ FEMA for suppression of any fire on publicly or privately owned forest and grassland which threatens to become a major disaster.

References

Section 417, P.L. 93-288, Disaster Relief Act of 1974.

Section 2205.35, Title 24, HUD Code of Federal Regulations, May, 1975.

Executive Order 11795 (Presidential).

Responsibilities

The Massachusetts Division of Forests and Parks is responsible for requesting and executing, on behalf of the State, necessary documents and certifications, including supplements to the standing Federal-State Agreement for Fire Suppression.

Procedures

The Governor, or his authorized representative (either the Director of Forests and Parks or the Chief Fire Warden), submits a request to the ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA Region I Office, supporting the request with factual information regarding resources committed, the nature of the threat, and the need for Federal assistance.

ANNEX A: SEARCH AND RESCUE, VICTIM IDENTIFICATION, AND MORTUARY SERVICES

I. INTRODUCTION

This Annex assigns and outlines responsibilities and task assignments associated with search and rescue, victim identification, and mortuary services for victims of disasters.

II. RESPONSIBILITIES

A. Local

The primary responsibility for the conduct of search and rescue, victim identification, and mortuary services operations rests with local government, and is carried out in time of disaster by local police, fire, civil defense and other emergency organizations.

Each city and town should have a well-developed plan providing, at a minimum, for:

--Organization and coordination of search and rescue teams, including volunteers (police auxiliaries, Appalachian Club chapters, power squadrons, etc.);

--Provision of emergency first aid;

--Identification of injured, and notification of relatives (local Red Cross chapters can assist with registration of disaster victims, and reuniting of families);

--Assistance from local funeral directors, churches, and private relief organizations in identification and care of the dead;

--Notification to county coroners that disaster-caused deaths have exceeded local resource capabilities, and assistance is necessary;

--Notification to the Massachusetts Civil Defense Area Emergency Operating Center (EOC), State Police, and/or adjacent or nearby military installation, that local search and rescue capabilities are inadequate to meet the situation, and that State or Federal assistance is required;

--Coordination of State, Federal or other external assistance.

B. State

Delivery of State assistance in search and rescue operations will be coordinated by the Secretary of Public Safety through the Massachusetts Civil Defense Agency (MCDA). Resources of particular importance are:

1. The State Police may provide personnel, air observation, and mobile communications;

2. The Massachusetts National Guard may provide manpower, vehicles, air observation, some engineering equipment, and mobile communications;

3. The Department of Public Works can provide manpower and trucks;

4. The Metropolitan District Commission (MDC) can provide amphibious rescue vehicles, operators, and divers for rescue efforts in flooded areas;

5. The Division of Forests and Parks can provide manpower, and is responsible for carrying out search and rescue operations within State operated forests, woodlands and parks;

6. If needed, the Massachusetts Wing, Civil Air Patrol, as a volunteer Civilian Auxiliary of the U.S. Air Force, will provide its facilities, personnel and equipment to support MCDA, in accordance with their Disaster Support Plan. (See Appendix 6, Massachusetts Civil Defense and Massachusetts Wing, Civil Air Patrol Disaster Support Plan.)

C. Federal

1. The U.S. Department of Defense and the U.S. Coast Guard perform or assist in search and rescue operations under provisions of their own statutory authority.

2. Additional Federal emergency assistance in support of search and rescue operations may be requested by the Massachusetts Civil Defense Agency (MCDA) through the ~~Federal Disaster Assistance Administration (FDAA)~~.
FEMA

III. PROCEDURES

Generally, search and rescue operations will be carried out in accordance with the procedures specified in Attachment 1 to Part One of this Plan.

Procedures for requesting assistance from the military are:

A. U.S. Department of Defense

1. Request for military resources to supplement search and rescue, evacuation and emergency transportation are made either directly to nearby Post or Base Headquarters, or to the First Army Emergency Operating Center, at Ft. Devens.

2. Military assistance cannot be committed until approval has been obtained from the First Army, unless immediate action is required to save lives.

B. U.S. Coast Guard

1. Assistance from the United States Coast Guard for sea search and rescue operations may be requested directly by private citizens or local authorities.

2. Assistance inquiries can be directed to nearby Coast Guard stations, or to the Commander, First Coast Guard District, Boston. (Telephone DUTY OFFICER 617-223-3644.)

ANNEX B: EVACUATION AND EMERGENCY TRANSPORTATION

I. INTRODUCTION

This Annex establishes responsibilities and assigns tasks for the evacuation of areas threatened or stricken by disaster, and for the provision of emergency transport of personnel or property in support of evacuation or other disaster relief actions.

II. RESPONSIBILITIES AND FUNCTIONS

A. Local

The responsibility and authority for the supervision and conduct of emergency evacuation and transportation operations in a city or town rests with its chief executive, and is exercised through its operating officials. Such operations may begin upon the occurrence of a disaster or emergency, or in anticipation of such an occurrence. In disasters such as flooding, where warnings may precede actual conditions by some time, officials should issue evacuation advisories at the earliest possible time. Effective evacuation operations require local government capability to meet the following responsibilities:

1. Developing and exercising emergency plans which designate sources of available transportation and types of vehicles, evacuation and reception areas, and reception resources. Such plans should include procedures for the provision of security in evacuated areas through use of regular and auxiliary police, where appropriate;
2. Organizing all available local resources, public and private, for transportation and evacuation;
3. Determining when local resources, including those available through mutual aid arrangements, appear insufficient to cope with evacuation requirements, and requesting the Massachusetts Civil Defense Agency (MCDA) for assistance in such instances;
4. Coordinating the utilization of State and other external assistance.

B. State

1. Governor

Following a proclamation of a State of Emergency, the Governor is authorized to direct and compel evacuation of any threatened or stricken area in the State, under provisions of the Civil Defense Act (General Laws, Chapter 639, as amended).

2. Massachusetts Civil Defense Agency

--Coordinates State-director evacuation operations on behalf of the Governor;

--Coordinates the delivery of required locally-requested State agency assistance in support of local evacuation operations;

--Assists local government in reception operations;

--Coordinates the marshalling and utilization of transportation resources for use in support of evacuation, including both publicly and privately owned vehicles;

--Requests required Federal assistance in support of State evacuation efforts.

3. Department of Public Works

Supports evacuation operations through traffic regulation, including, where required, implementation of provisions of the Emergency Highway Traffic Regulation Plan.

4. Law Enforcement Agencies

The Registry of Motor Vehicles, State Police, and Metropolitan District Commission, within the scope of their responsibilities, assist in evacuation, security, and law enforcement operations.

5. Massachusetts National Guard

The Massachusetts National Guard supports evacuation operations with both personnel and vehicles.

6. Department of Public Health

--Provides guidance and assistance in evaluating chemical, biological and radiological hazards;

--Assures provision of emergency medical support and other health care services to evacuees;

--Establishes guidelines for evacuation and re-entry of contaminated areas.

7. Department of Public Welfare

Assures the provision of evacuee shelter, mass feeding, registration and clothing through operation of Emergency Welfare Services.

C. Federal

1. Military bases near or adjacent to disaster areas normally can provide vehicles and personnel in support of evacuation operations under their own statutory authorities;

2. Under Section 416, P.L. 93-288, the ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA is authorized to provide temporary emergency public transportation service to meet needs in disaster areas. (See TAB M, Part Two.)

D. American National Red Cross

The American National Red Cross, by statute and agreements, is charged with meeting the human needs of families affected by a natural disaster. This responsibility includes the conduct of mass care operations (food, clothing, and shelter) associated with reception of evacuees, and is covered in Annex H to this Plan.

III. TASK ASSIGNMENTS

A. Preparedness Actions

1. Local governments will assure that effective evacuation plans exist for identified hazardous areas, and that generalized procedures have been developed for unexpected emergency.

   Such plans should provide for:

   --Alerting and warning of operating officials and the public;

   --Designation or mechanisms for designation of evacuation zones;

   --Establishing reception points;

   --Coordinating activities of local emergency forces;

   --Requesting Federal and State assistance.

2. The Massachusetts Civil Defense Agency (MCDA) will assist local communities through provision of guidance in developing evacuation plans. (Appendix 3 of this Plan consists of evacuation plans for areas surrounding nuclear power stations.)

B. Response Actions

State-directed evacuation, or State assistance to local evacuation efforts will be conducted in accordance with Part One of this Plan.

IV. PROCEDURES

Procedures for requesting evacuation assistance from the military are:

A. U.S. Department of Defense

1. Request for military resources to supplement search and rescue, evacuation and emergency transportation are made either directly to nearby Post or Base Headquarters, or to the First Army Emergency Operating Center, at Ft. Devens.

2. Military assistance cannot be committed until approval has been obtained from the First Army, unless immediate action is required to save lives.

B. U.S. Coast Guard

1. Assistance from the United States Coast Guard for assistance in the evacuation of coastal or island areas may be requested directly by private citizens or local authorities.

2. Assistance inquiries can be directed to nearby Coast Guard stations, or to the Commander, First Coast Guard District, Boston. (Telephone DUTY OFFICER 617-223-3644.)

ANNEX C: DEBRIS REMOVAL

I. INTRODUCTION

Debris removal functions are organized to effect the timely removal of disaster-caused debris from publicly and privately owned lands and waters when such is determined to be in the public interest.

The Massachusetts Civil Defense Agency (MCDA) operates an Engineering Service, which will be actively involved in the coordination of debris removal operations in times of emergency requiring State assistance. The Engineering Service is coordinated by Executive Order 144 assignees to MCDA from the Massachusetts Department of Public Works (DPW), and is composed of personnel and resources of the DPW, the Department of Environmental Quality Engineering, the Metropolitan District Commission (MDC), private and local engineering resources, and, where appropriate, Federal agency representatives.

II. RESPONSIBILITIES AND FUNCTIONS

A. Local

1. Public Works Departments, supplemented by Water Districts, are responsible for:

    a. Pre-emergency coordination with public agencies and private contractors, utilities, or other organizations for the emergency use of debris removal equipment;

    b. The organization, equipping and training of volunteer and other supporting services;

    c. Maintaining up-to-date personnel alerting rosters and debris removal operations plans.

2. Local or multi-jurisdictional disaster preparedness agencies are responsible for determining the need for supplementary (State or Federal) debris removal assistance.

B. State

1. Massachusetts Civil Defense Agency

a. Coordinates debris removal operations performed by State agencies;

b. Provides guidance to local jurisdictions in the preparation and submission of applications for Federal grants for the cost of debris removal, as authorized under Section 403, P. L. 93-288 (see Tab C, Part Two of this Plan);

c. Supports the Governor's Authorized Representative (GAR) in the receipt, processing, and forwarding of local applications for Federal debris removal grant assistance (see Part Two, "Organization");

d. Assists the State Coordinating Officer (SCO) in his coordination, through the ~~Federal Disaster Assistance (FDAA)~~ FEMA, of the emergency removal of debris under authority of Section 305, P. L. 93-288 (see Tab A, Part Two).

2. Department of Public Works, Maintenance Division

a. Is directly responsible for removal of debris from the State Highway System;

b. At the direction of the Governor, or following a Gubernatorial emergency declaration, through the coordination of the SCO (Secretary of Public Safety), undertakes measures as required to avert loss of life or injury, or damage or destruction to property, and to protect the health, safety, convenience, and welfare of the people.

3. Department of Environmental Quality Engineering

a. Is directly responsible for clearance of debris from waterways under its control, and for removal of debris from dams and other flood control works which it oversees;

b. At the direction of the Governor, or, following a Gubernatorial emergency declaration, through the coordination of the SCO (Secretary of Public Safety), undertakes debris removal measures as required to avert loss of life or injury, or damage or destruction to property, and to protect the health, safety, convenience, and welfare of the people.

4. Adjutant General

Upon the direction of the Governor, is responsible for emergency clearance of debris from roads, bridges, and other essential public facilities. (Local authorities may, in the event of public catastrophe or natural disaster, summon National Guard assistance through issuance of a precept, under provision of Chapter 33, Sections 42-46 and 49, of the General Laws.)

III. TASK ASSIGNMENTS

A. Local

In anticipation of an emergency, and as part of its general preparedness program, local jurisdictions should:

1. Anticipate extraordinary needs for supplies and equipment, including spare parts and emergency fuel and lubricants;

2. Maintain vehicles and other equipment in a high state of readiness; and

3. Determine, in advance, the availability of privately-owned (contractor) equipment useful for emergency debris removal, and establish procedures for requesting the use of such equipment and the provision of personnel to operate and maintain it.

In the event of an emergency, local emergency forces:

1. Assist in the emergency removal of debris and rubbish, take appropriate rescue actions, and clear debris to permit access to impact areas and evacuation of the injured;

2. Coordinate closely with the Massachusetts Civil Defense Agency (MCDA), and, through it with FEMA ~~Federal Disaster Assistance Administration (FDAA)~~ and other appropriate State and Federal agencies;

3. Compile and transmit, in a timely manner, adequate and accurate information on all phases of the debris removal operation;

4. Maintain accurate logs on the utilization of public and contractor manpower and equipment; and

5. Prepare and file accurate and complete disaster assistance claims.

B. State

1. Massachusetts Civil Defense Agency

a. The Massachusetts Civil Defense Agency (MCDA) will receive, validate and transmit through the Executive Office of Public Safety to the appropriate Federal or State operating agency local requests for emergency debris removal assistance; and

b. Will receive and process, and forward through the State Coordinating Officer (Secretary of Public Safety), applications for Federal debris removal assistance grants, to the Federal Coordinating Officer (FCO).

2. Massachusetts National Guard

The Massachusetts National Guard, when so directed by the Governor, provides available debris removal equipment and the qualified personnel required to operate it.

3. Other State Agencies

State agencies, notably the Department of Public Works and the Department of Environmental Quality Engineering, within the scope of their responsibilities, will undertake debris removal operations to the extent that their resources permit.

C. Federal

Federal Disaster Assistance Administration

When the President declares a Major Disaster in the Commonwealth of Massachusetts, the Federal Coordinating Officer (FCO), other ~~Federal Disaster Assistance Administration~~ FEMA (FDAA) officials and representatives of appropriate Federal agencies, the Secretary of Public Safety as State Coordinating Officer (SCO), Massachusetts Civil Defense Agency (MCDA) personnel and officials of other State agencies and local governments jointly assess immediate and post-emergency debris removal requirements, in that order of priority, and effect appropriate removal action.

FEMA ~~FDAA~~ may coordinate U.S. Army Corps of Engineers or other Federal agency activity so as to utilize their material resources, personnel or funding to relieve immediate debris removal problems.

ANNEX D: POLICE SERVICES

I. INTRODUCTION

Police Services are organized to provide law enforcement resources for the protection of life and property, and to establish necessary control procedures in emergency or disaster stricken areas.

The Massachusetts Civil Defense Agency (MCDA) operates a Police Service coordinated by Executive Order 144 assignees to MCDA from the State Police, and composed of personnel and resources of the State Police, the Registry of Motor Vehicles, Metropolitan District Commission Police, Capitol Police, other State law enforcement authorities, local police representatives, and, where appropriate, Federal law enforcement designees.

II. RESPONSIBILITIES

A. Local

In time of disaster, local police and security services are provided by regular city and town police departments, augmented, where necessary, by trained auxiliaries and reserves. Local police service responsibilities include:

--Protection of life and property; enforcement of laws and regulations; control and regulation of traffic; and maintenance of order;

--Enforce vehicular traffic laws and regulations, and coordinate the movement of people during evacuation;

--Provide security for evacuated areas, and for public facilities requiring such security provisions.

B. State

1. State Police

--Assist in search and rescue operations;

--Assist local law enforcement authorities;

--Alert State and local law enforcement authorities via NAWAS and LEAPS;

--Provide air support for disaster operations;

--Provide mobile communications, traffic control, and disaster intelligence for disaster operations;

--Provide security for State Emergency Operating Centers (EOCs).

2. Massachusetts Civil Defense Agency

The Massachusetts Civil Defense Agency (MCDA), through utilization of the Civil Defense Police Service, identifies needs, determines resources, and coordinates utilization of available State and local law enforcement resources to particular emergency problems.

MCDA also furnishes appropriate training and guidance to local police auxiliaries, and other police service personnel in preparation for disaster response operations.

3. Massachusetts National Guard

Units of the National Guard are available to assist Civil Authorities in security operations, under the general direction of civil authorities, in time of disaster.

4. Other State Law Enforcement Resources

Metropolitan District Commission Police, Registry of Motor Vehicles Inspectors, Capitol Police and personnel of the Division of Law Enforcement of the Executive Office of Environmental Affairs, constitute other potential law enforcement resources available for disaster operations. Such resources are available through coordination of the Massachusetts Civil Defense Agency.

C. Federal

Under certain circumstances, personnel and equipment of the various agencies of the Department of Defense, Department of the Treasury, and Department of Justice can assist in State and local law enforcement operations. Such assistance can be requested through the Massachusetts Civil Defense Agency.

III. TASK ASSIGNMENTS

A. Preparedness

Local and State law enforcement agencies are responsible for developing emergency plans which permit:

1. Establishment and maintenance of liaison with appropriate law enforcement authorities at all levels of government under emergency conditions;
2. Establishment and maintenance of liaison with Headquarters and Area elements of the Massachusetts Civil Defense Agency;
3. Coordination of emergency law enforcement operations in emergency situations in accordance with the provisions of this Plan.

B. Response

Upon notification by the Massachusetts Civil Defense Agency (MCDA), or through other authoritative alerting mechanism, the Division of State Police shall:

1. Activate the Police Services at the State Emergency Operating Center (Framingham), and at appropriate Area Operating Centers;
2. Make assignments of personnel based on the situation;
3. Coordinate Police Services response;
4. Assist MCDA in intelligence, communications, and coordination functions.

TAB A

Department of Public Safety
Communications Inventory - Radio

950	Two channel mobile radios	44.MHz
530	Eight channel mobile radios	42.MHz
53	Two channel portable radios	42.MHz
62	Eight channel portable radios	42.MHz
20	One channel portable radios	44.MHz
25	Two channel portable radios	44.MHz & 45.MHz
15	Two channel base stations	42.MHz
27	One channel base stations	44.MHz
6	Two channel base stations	44.74
1	71 Dodge Walk-In Van (Command Post)	
6	One channel base stations	158.97MHz

Note: All mobile radios are 100 Watts
All portable radios are either 1 or 2 Watts
All base stations are either 30, 50, 60, 100 or 300 Watts
Some portable radios are available on a limited day-to-day basis during emergencies only.

TAB B

Division of State Police
Location List of
All State Police Facilities with Telephone Numbers

NAME	TEL. NO.	NOTES
A TROOP		
Framingham	617-872-3553	
Andover	617-475-3800	
Topsfield	617-887-2314	
Concord	617-369-4100	
Foxboro	617-543-8550	
Peabody	617-530-5050	
B TROOP		
Northampton (HQ)	413-584-3000	
Lee	413-243-0600	
Shelburne	413-625-6311	
Pittsfield	413-445-5511	
Russell	413-862-3312	
C TROOP		
Holden (HQ)	617-829-4431	
Athol	617-249-4341	
Grafton	617-839-4424	
Brookfield	617-867-2912	
Leominster	617-537-2188	
Sturbridge	617-347-3352	

NAME	TEL. NO.	NOTES
D TROOP		
Middleboro (HQ)	617-947-2222	
Norwell	617-659-7911	
Yarmouth	617-398-2323	
North Dartmouth	617-993-8373	
Oak Bluffs	617-693-0545	
Nantucket	617-228-0706	
Bourne	617-759-4488	
E TROOP		
Weston (HQ)	617-237-2931	
Charlton	617-248-5816	
Westfield	413-562-9986	
F TROOP		
Logan Airport (HQ)	617-567-2233	

ANNEX E: DAMAGE ASSESSMENT

I. INTRODUCTION

Assessment of disaster-related damages is a large part of the intelligence gathering and analysis function described in Attachment 1 to Part One of this Plan. This Annex is limited to those actions which provide factual information for use by the Massachusetts Civil Defense Agency (MCDA) in determining the severity and magnitude of a disaster situation, and advising the Governor through the Secretary of Public Safety as to appropriate State response. Should this response involve requesting Federal assistance, the ~~Federal Disaster Assistance~~ Administration (FDAA) FEMA will require damage assessment in some detail. The procedures set forth in the Annex are designed to facilitate the preparation of such information.

II. RESPONSIBILITIES

A. Local

City and town governments are responsible for notifying the Massachusetts Civil Defense Agency (MCDA), through their local civil defense director or other appropriate official, of any actual or potential disaster situation affecting their community, and for assuring that the following responsibilities are met:

1. Supplying preliminary estimates of damage to public facilities, private homes, and businesses, and of the resources available to the community to meet disaster needs;

2. Assisting State agency engineers by identifying damaged areas, and providing qualified personnel to assist in quantifying such damage;

3. Providing, when requested, estimates of the value of local resources committed to disaster relief efforts for which no reimbursement will be sought, and maintaining records adequate to support such estimates.

B. State

State agencies receive and validate information from local communities in accordance with the provisions of Part One of this Plan. (See Attachment 1, "Emergency Intelligence Gathering and Analysis.") Additionally, the Massachusetts Civil Defense Agency (MCDA) exercises the following responsibilities:

1. Organizes and activates Preliminary Field Survey Teams, consisting of representatives of local and State agencies, and leads such teams in developing initial physical and socio-economic estimates of damages and losses;

2. Analyzes Preliminary Field Survey Team reports and assesses local disaster response capabilities;

3. Advises the Governor, through the Secretary of Public Safety, as to appropriate State action, and, if effective response is beyond State and local capabilities, assists the Governor in requesting Federal assistance.

C. Federal

Upon notification of an emergency situation which may result in a request for Federal disaster assistance, the ~~Federal Disaster Assistance Administration~~ (FDAA) -FEMA will ordinarily arrange for the informal participation by Federal agency personnel in Preliminary Field Survey Team efforts. Upon receipt of the Governor's request, ~~FDAA~~ will coordinate the conduct of field damage surveys by Federal agency personnel.

FEMA

III. CONCEPT OF OPERATIONS

The procedures which follow were developed pursuant to the concept that there are three elements involved in the assessment of damages. These are:

--Identification of the type, location and extent of damages. Preliminary Field Survey Teams, activated by the Massachusetts Civil Defense Agency (MCDA), prepare quantitative estimates of damages in the public, private, and agricultural sectors, and qualitative reports on the nature and extent of those damages.

--Evaluation of the severity and magnitude of the disaster. MCDA is responsible for interpreting the raw factual data obtained from the preliminary field survey and estimating the disaster's impact on the community. To do so, MCDA identifies the response necessary to mitigate the disaster and evaluates local and/or State capability to deal effectively with the situation.

--Recommendation of appropriate State response. The Secretary of Public Safety, based upon intelligence from the Massachusetts Civil Defense Agency (MCDA), recommends appropriate State action and, if necessary, Federal assistance required. Federal action is necessary only if the situation is such that effective response is beyond the capability of State and local governments.

IV. TASK ASSIGNMENTS

A. Identification

1. Verification Upon receipt of information indicating an actual or imminent disaster situation (TAB A), the Massachusetts Civil Defense Agency (MCDA) verifies that information through its own field personnel or that of other State agencies.

2. Preliminary Field Survey Teams If immediate or subsequent State action appears necessary, MCDA constitutes Preliminary Field Survey Teams from among lists of previously designated individuals from the agencies in TAB B. The actual make-up of any team will depend upon the nature of the damages in the area to which it is assigned. Teams are assigned specific communities, work with local officials of these communities, and report their estimates to MCDA.

3. Survey Methods Preliminary field survey methods consist of aerial inspections, photo interpretations, site surveys, or any other means available to assist in determining, conveying, and quantifying the magnitude, extent and impact of disaster damages.

4. Report Organization In order to maintain the compatibility of Preliminary Field Survey Team reports

with Federal assistance information requirements, such reports must be organized as follows:

--work eligible under the statutory authorities of other Federal agencies (e.g. U.S. Army Corps of Engineers, Federal Highway Administration, Office of Education) must be separated from the general damage estimates;

--damage estimates must be collected on a county or city/town basis and subdivided into three categories -- Public, Private, and Agricultural. These categories are defined below.

5. Federal Damage Category Definitions The ~~Federal Disaster Assistance Administration (FDAA)~~ FEMA categorizes disaster damage as follows:

--"Public damage" includes damages to State and local government owned/maintained facilities, and permanent repair to private non-profit utility, educational, medical and custodial care facilities. Monetary estimates of damage must be substantiated by quantity, size, number or any other physical description. In addition to tabulating damage estimates by community, the costs are subdivided into eight work categories. These are listed in TAB B, together with the respective State agency(ies) responsible for the damage assessment.

--"Private damage" takes into account the effect of the disaster on individuals, families, and businesses. (See TAB C.) The amount and extent of damages to business establishments, homes, mobile homes, and multiple family units, and the number of families requiring food, clothing and shelter are of primary concern.

Private damage assessment is primarily a local governmental function coordinated by the chief executive and undertaken by local officials, who, because of normal areas of responsibility, have knowledge of community elements which have been damaged. Human service, public works, police and fire personnel are among the typical predesignated participants of a local damage assessment team.

Support to local officials in their assessment of private damage can come from several sources, notably from their counterparts in neighboring communities, from private relief organizations (Massachusetts has a standing agreement with the American National Red Cross to assist in such efforts), business and trade associations, and from State agencies.

State participation in damage assessment is coordinated by the Massachusetts Civil Defense Agency (MCDA), which composes assessment teams from amongst predesignated rosters developed by those agencies with responsibilities relevant to the damage.

--"Agricultural damage" considers the effect of the disaster on: farm households and their contents, farm structures and equipment, crops and livestock, and crop-land and pasture. Chief concerns include the percentage of land damaged and the length of time needed to resume normal operations.

The U.S. Department of Agriculture's State-wide Emergency Board, in Amherst, has an on-going program to receive damage estimates in order for appropriate action to be taken under USDA authority. Members of the Soil Conservation Service, Emergency Conservation Measures, and the Farmers Home Administration are active participants on the emergency board. Upon request, the board furnishes the Massachusetts Civil Defense Agency (MCDA) with estimates of agricultural damage and USDA relief assistance on a county-by-county basis.

B. Evaluation

Effective evaluation involves an assessment of both the severity of the disaster, and of its impact upon the communities involved. The Massachusetts Civil Defense Agency (MCDA) conducts this assessment through a thorough analysis using the following procedures:

1. Conducts an analysis of the response actions necessary to reduce the immediate impact on people and property. Such actions might include the execution of protection or evacuation measures, measures to alleviate health and safety threats, flood control measures, and the utilization of emergency communications and transportation equipment.

2. Analyzes the community's ability to respond to the disaster situation, particularly its organizational capabilities and its access to necessary resources -- either its own or those available through mutual aid arrangements.

3. Assesses those recovery actions necessary to restore community services to pre-disaster condition, and the community's capability to take such actions utilizing its own resources.

C. Recommendation

The Massachusetts Civil Defense Agency (MCDA) will recommend appropriate State action to the State Coordinating Officer (Secretary of Public Safety) upon review of the field survey and its assessment of the required response. State action can include:

--assistance from the State agencies in the performance of specific response functions;

--the coordination of requests to private relief groups or unaffected municipal governments for assistance;

--a Gubernatorial emergency declaration;

--enactment of emergency financing measures including legislation.

The Massachusetts Civil Defense Agency (MCDA) will recommend that the Governor request Federal assistance if the disaster situation (actual or impending) is such that affective response is beyond State and local capability.

Federal assistance can include assistance and recovery actions which are available through a Federal agency's statutory authority, or that available through an "Emergency" or "Major Disaster" declaration under Public Law 93-288.

Federal actions must be justified by the preliminary field survey, an assessment of the response capability of State and local governments and, in the event of a request for an "Emergency" or "Major Disaster" declaration, evidence that a significant commitment of State and local resources will be made.

TAB C

PRIVATE DAMAGE

1. People:

   - Dead
   - With injuries or illness
   - Hospitalized

2. Dwellings:

   - Destroyed
   - With major damage
   - With minor damage
   - Approximate % insured
   - Approximate % of insured value
   - Approximate % owner occupied

3. Mobile Homes:

   - Destroyed
   - With major damage
   - Approximate % insured

4. Apartments, Condominiums, etc.:

   - Family units destroyed
   - Family units with major damage
   - Family units with minor damage

5. Small Businesses:

   - Destroyed or with major damage

6. Total Families Suffering Loss

7. Red Cross Assistance - Mass Care:

   - Number of shelters
   - Persons sheltered
   - Victims and workers given mass care

ANNEX F: MEDICAL SERVICES

I. INTRODUCTION

Emergency Health and Medical Services are organized to provide immediate care for disaster victims and to mitigate disaster-related health hazards.

The Massachusetts Civil Defense Agency (MCDA) operates a Medical Service, coordinated by Executive Order 144 assignees to MCDA from the Department of Public Health and composed of personnel and resources of State, local, appropriate Federal, and private relief organizations.

II. RESPONSIBILITIES

A. Local

1. City and town governments are responsible for maintaining safe water supplies, effective sewage and waste disposal, and food sanitation standards.

2. Medical services are the responsibility of public and private hospitals and physicians. Local hospitals will receive support from other hospitals within their region.

B. State

1. The Massachusetts Department of Public Health is responsible for:

   --Monitoring radiation levels and collecting suspected samples for analysis;

   --Controlling disease vectors and epidemics;

   --Issuing declarations relative to the above emergencies;

   --Certifying to food and drug safety;

   --Providing laboratory services to support the above work.

2. The Massachusetts Department of Environmental Quality Engineering is responsible for:

   --Monitoring all environmental health concerns, with the exception of radiation;

   --Providing technical expertise and laboratory services in support of water purification and adequate sewage and waste disposal.

3. Other State agencies can augment local governments with:

   --National Guard ambulance service;

   --National Guard Field Hospitals;

   --Pre-positioned disaster hospitals;

   --Technical support staff from available agency personnel.

C. Federal

Upon request, Federal agencies can supplement State and local governments by providing:

--Technical expertise in health, environmental, sanitation and radiation problems;

--Supplementary medical staff, facilities, and ambulance vehicles;

--Additional personnel and support staff.

III. CONCEPT OF OPERATIONS

A. Local

1. Maintaining health and medical services will be routinely performed.

2. Emergency Medical Teams to administer first aid and to transport the injured will be maintained.

3. Whenever service cannot be provided locally, mutual aid agreements and regional associations can supplement individual town requirements.

B. State

1. Department of Public Health monitoring of disease and radiation will be performed on a routine basis.

2. Department of Environmental Quality Engineering programs to keep water quality high and sewage and waste disposal safe are to be maintained.

3. Periodically test and update supplementary programs.

C. Federal

1. U.S. Department of Health, Education, and Welfare and the Environmental Protection Agency will perform normal health and medical services on a routine basis.

2. Laboratory testing and technical expertise, whenever the situation is beyond local/State capability, can be provided.

IV. PROCEDURES

A. Medical Care

In the event of a disaster, Emergency Medical Service Teams, private ambulance and fire/police rescue squads will transport victims to available hospitals. If the situation cannot be handled locally, hospitals in regional associations will assist with the injured. Whenever the disaster is beyond the capabilities of the local/regional hospitals, assistance on the State level can be requested through the Massachusetts Civil Defense Agency (MCDA), or, a direct request to U.S. government military hospitals in the immediate area can be made.

State assistance consists of National Guard Ambulance and Field Hospitals, and pre-positioned packaged disaster hospitals. Additional medical personnel, on a limited basis, can be requested from Department of Public Health hospitals and staff. Supplementary Federal assistance in the form of U.S. Army Field Hospitals, ambulance, and medical personnel can be requested through the ~~Federal Disaster Assistance Administration (FDAA~~) FEMA. Other medical personnel may be available from the U.S. Public Health Service and/or Department of Defense installations.

B. Health

1. Radiological

The Massachusetts Department of Public Health, Radiation Control Unit, is responsible for monitoring radiation levels and inspecting food, water and other supplies which were subject to radiological contamination. Laboratory and technical assistance from Federal agencies is available if the situation is beyond the State's capability.

2. Other

The Massachusetts Department of Public Health has the responsibility for monitoring and controlling disease vectors, communicable diseases and epidemics. An emergency declaration relative to the above problems will be declared if the health problem warrants. Assistance on the Federal level is available from the Center for Disease Control and the Public Health Department.

Monitoring and testing of water supplies, sewage and waste disposal is the responsibility of local governments. The Massachusetts Department of Environmental Quality Engineering can provide technical and laboratory assistance whenever it is necessary. All situations which may develop into environmental health problems are the responsibility of the Department of Environmental Quality Engineering. Federal assistance from the Environmental Protection Agency is also available.

ANNEX G: EMERGENCY WELFARE SERVICES

I. INTRODUCTION

Emergency Welfare Services are services and programs organized to provide food, clothing, shelter, and other basic necessities of life to persons unable to provide for themselves as a result of a disaster situation.

The Massachusetts Civil Defense Agency (MCDA) operates a Welfare Service, coordinated by Executive Order 144 assignees to MCDA from the Department of Public Welfare and composed of personnel and resources of State, local, appropriate Federal, and private relief organizations.

II. RESPONSIBILITIES

A. Local

Local government responsibilities include:

--Evaluating emergency responsibilities and requirements for food, clothing, shelter, and other personal needs of disaster victims;

--Ensuring that all available local and mutual aid resources are committed;

--Requesting required additional assistance through the Massachusetts Civil Defense Agency (MCDA);

--Assisting in the pre-designated and emergency designation of sites for mass shelter and feeding and for administration of financial and emergency services.

Local chapters of the American National Red Cross (ANRC) are expected to assume responsibility for extending relief when disaster needs cannot adequately be met with local resources. Additional resources are available from ANRC when local chapter resources are overwhelmed (see ANNEX H).

B. State

1. Department of Public Welfare

The Massachusetts Department of Public Welfare provides planning, organization and direction necessary to institute welfare services both before and after the onset of emergency conditions. These emergency measures include, but are not limited to the following:

--Coordinating emergency planning with the Massachusetts Civil Defense Agency (MCDA), and other State agencies supporting emergency welfare services;

--Providing guidance and technical assistance to local communities to assist them in developing their plans and capabilities, including:
(a) Recommending standards for assistance in the areas of mass feeding, shelter, and caring for special groups; and,
(b) Development of manuals, training guides, and procedures in cooperation with the Bureau of Public Assistance of the U.S. Department of Health, Education and Welfare;

--Evaluating the adequacy of welfare resources in the State, including supplies, facilities for the care of people, and professional personnel;

--Coordinating emergency welfare activities with affected local communities, the American National Red Cross (ANRC), the Salvation Army and other private relief organizations;

--Coordinating activities and resources of State and Federal agencies having welfare support assignments;

--Recommending inter-regional transfer of resources for care of people, including assistance to equalize distribution of the refugee care load; and

--Receiving, distributing, and accounting for Federal materials, food coupons, and funds made available for welfare services.

2. Massachusetts Civil Defense Agency

The Massachusetts Civil Defense Agency (MCDA) exercises the coordinative responsibilities set forth in Part One of this Plan, which include:

--Coordinating the provision of available equipment, facilities, and personnel required for emergency welfare services;

--Maintaining emergency communications for utilization by emergency welfare services personnel.

3. Massachusetts Department of Education

The Massachusetts Department of Education administers Federal surplus food commodities programs on behalf of the Commonwealth.

4. Adjutant General

The Massachusetts National Guard provides, when available and within its capabilities, logistics support, emergency fresh water supplies, and emergency feeding augmentation.

C. Federal

The U.S. Department of Agriculture (Food and Nutrition Service) makes food coupons and U.S. surplus commodities available, through State or private agencies, for emergency mass feeding or distribution in any area of the United States which suffers a major disaster or emergency.

ANNEX H: COORDINATION OF PRIVATE RELIEF ORGANIZATIONS

I. INTRODUCTION

Emergency feeding, clothing, shelter, and other care of disaster victims is a responsibility shared by government, relief organizations, and volunteers. This Annex describes the respective responsibilities and roles of the American National Red Cross, Salvation Army, Mennonite Disaster Service, and other private relief organizations, and local, State and Federal agencies in providing relief to persons affected by natural disaster.

II. ORGANIZATION

A. Massachusetts Civil Defense Agency - Relief Agency Advisory Committee

Massachusetts has provided, through the operation of an Advisory Committee consisting of appointees from the Massachusetts Civil Defense Agency (MCDA), the Massachusetts Department of Public Welfare, the American National Red Cross (ANRC), the Salvation Army, the Mennonite Disaster Service, Catholic Charities, the Society of St. Vincent de Paul, and the Seventh-Day Adventists for coordinated provision of private agency resources.

The American National Red Cross (New England Division) has agreed, on behalf of all of the private relief organizations represented on the Advisory Committee, to exercise the responsibility of providing liaison with MCDA, at both the State Emergency Operating Center (EOC) in Framingham, and at each Area Emergency Operating Center (EOC).

B. Massachusetts Civil Defense Agency Welfare Service and Medical Service

1. The Massachusetts Civil Defense Agency (MCDA) Medical Service provides for the organization and direction of medical facilities and resources to minimize the effects of disaster, and outlines the organization, functions and responsibilities of these services. The American National Red Cross (ANRC) will continue to augment existing community medical resources to make necessary medical and nursing care available.

2. Personnel of the Massachusetts Civil Defense Agency (MCDA) Welfare Service may assist in Red Cross disaster services as requested by Red Cross Chapter or Branch heads, under the direction of the American National Red Cross (ANRC).

C. American National Red Cross

The American National Red Cross is organized on a Chapter basis. Within the Chapter there is either a Red Cross Branch or representatives in each community in the Chapter. Massachusetts Chapters receive guidance, support and field services from New England Division Headquarters, 99 Brookline Avenue, Boston, 02215 (Telephone 617-262-4940).

III. RESPONSIBILITIES AND FUNCTIONS

A. American National Red Cross

1. The American National Red Cross (ANRC), in accordance with its responsibilities under Congressional Charter, carries out a broad program of its tradition services to those in need as a result of disaster of any size or magnitude. Red Cross services include provision of, among other things, such assistance as food, clothing, shelter, medical care, household furnishings, building and repair of homes, and occupational rehabilitation.

2. The Red Cross also assumes responsibility for providing individual services to families, including information service on dead, missing, or injured; answering welfare inquiries; and providing emergency assistance to individuals and families beyond the mass care services listed above.

B. Other Relief Agencies

The Salvation Army, Mennonite Disaster Service, Seventh-Day Adventists, and other private relief agencies can provide food and feeding facilities, emergency shelter, clothing, household items, and crisis counseling. During large-scale disaster, such activities are coordinated with Red Cross and government disaster relief efforts through liaison provided by the Red Cross.

C. State Agencies

1. The Secretary of Public Safety, as State Coordinating Officer, is responsible for coordinating all State agency activity in time of disaster, including that in support of Red Cross relief actions.

2. The Massachusetts Civil Defense Agency (MCDA) is responsible for coordinating disaster actions as the operating arm of the State Coordinating Officer, and for maintaining effective liaison with the Red Cross and other relief organizations during preparedness, response, and recovery disaster operations.

D. Local Government

Local officials, notably local civil defense directors, are responsible for assuring that effective planning and liaison is maintained between the city or town and the Red Cross Chapter or Branch.

E. Federal Government

The broad range of Federal disaster assistance available following a Presidentially declared major disaster can, in many cases, support Red Cross and other relief efforts, when necessary. Part Two of this Plan describes this assistance. TAB F (Individual and Family Assistance), TAB G (Food Stamps), TAB H (Food Commodities) and TAB J (Crisis Counseling) to Part Two are especially pertinent.

IV. CONCEPT OF OPERATIONS

A. The basic relationship between the Red Cross and the Massachusetts Civil Defense Agency is established by a memorandum of understanding appearing as Appendix 1 to this Plan.

B. In the performance of its services, the Red Cross will retain administrative and financial control of its own resources.

C. The Red Cross has agreed to coordinate the performance of its services with the appropriate Civil Defense organization, or with an appropriate official or agency of State or local government, should the magnitude of a disaster not require Civil Defense coordination.

D. Red Cross operations within the Commonwealth will be carried out in accordance with its Emergency Response Plan, which appears as TAB A to this Annex, and with existing Statements of Understanding between the Commonwealth of Massachusetts and the American National Red Cross.

E. Liaison, planning and exchange of information must be maintained between the Red Cross and the Massachusetts Civil Defense Agency. Similar arrangements should be carried down to the community level by the appointment of civil defense representatives to local Red Cross disaster committees, and by the assignment of Red Cross liaison representatives to local civil defense staffs.

TAB A

THE AMERICAN NATIONAL RED CROSS
EMERGENCY RESPONSE PLAN

I. PURPOSE

To define the role and responsibilities of the American National Red Cross in disasters within the Commonwealth of Massachusetts.

II. SCOPE

A. The American Red Cross, by statute and agreements, is charged with the responsibility of helping meet the human needs of families affected by a natural disaster. Such aid is not dependent upon a Presidential or other federal disaster declaration but is provided regardless of the size of the catastrophe or disaster incident.

B. In war-caused situations, the American Red Cross will use its facilities and personnel to support and assist welfare and emergency operations of the Massachusetts Civil Defense Agency and Office of Emergency Preparedness to the extent possible, while carrying out its other essential responsibilities and assignments.

C. The American Red Cross will cooperate and coordinate with all agencies, public and private, at the local, state and national levels, whose activities are directed toward the alleviation of disaster-caused suffering and needs.

III. RESPONSIBILITIES

The American National Red Cross will provide disaster assistance in accordance with the Statement of Understanding between the Commonwealth of Massachusetts and the American National Red Cross.

A. Preparedness Measures - American Red Cross will:

1. Recruit and train disaster personnel and maintain rosters of available staff and volunteers.

2. Maintain agreements with shelter facilities to be used for disaster mass care operations.

3. Conduct pre-survey assessment of potential disaster areas.

4. Maintain an updated list of available material resources necessary for disaster relief operations.

5. Assist in disseminating warnings of approaching or impending disasters.

6. Assist in warning, rescue and evacuation of people.

7. Promote National Flood Insurance Program.

8. Provide emergency information concerning welfare of evacuees.

B. Emergency Response - Depending upon the potential hazards and the nature and extent of a particular disaster, the American Red Cross may provide any or all of the following services, during the immediate emergency period:

1. Obtain damage assessment surveys of affected areas, and determine the kinds of services that must be provided.

2. Establish and administer mass care centers - provide medical and nursing coverage.

3. Provide food at fixed and mobile feeding stations.

4. Augment resources of public health and hospital facilities by recruiting additional physicians and nurses.

5. Establish first aid stations.

6. Assist in transporting the sick and injured.

7. Assist in securing additional medical supplies.

8. Provide whole blood and its derivatives when needed.

9. Meet the immediate needs of persons requiring food, clothing, essential household furnishings and other basic needs.

10. Provide personnel at the Massachusetts Civil Defense Emergency Operating Center at Framingham, and the Emergency Operating Centers at Bridgewater, Tewksbury, Westboro and Belchertown when they are established for liaison and coordination.

11. Provide welfare inquiry service on a continuing basis for those families in need of such service.

C. Recovery Assistance

1. Without a Presidential declaration of a major disaster, the American Red Cross will provide recovery assistance for disaster-caused needs that are beyond the resources of the family to resume normal family life in the home and community. Need, not loss, is the basis of assistance, and depending on the evaluation of the needs, and resources available, assistance may include:

   a. Food, clothing and other maintenance until the family income is restored or other regularly constituted benefits are obtainable in the community.

   b, Emergency shelter and temporary housing up to thirty (30) days following a disaster or until other resources are available to meet the need.

   c. Repair or rebuilding of owner-occupied homes and other essential structures.

   d. Household furnishings through purchase of basic items essential to family living.

   e. Medical and nursing care for those injured or made ill because of the disaster, or whose condition is aggravated by the disaster.

   f. Occupational supplies and equipment.

2. After a Presidential declaration of a major disaster, programs under the Disaster Relief Act of 1974 are made available and individuals are eligible for immediate and recovery assistance through agencies such as SBA, FHA and HUD. The American Red Cross will assist federal and state disaster relief

coordinators in the establishment and operation of Disaster Assistance Centers.

3. In the event that all the resources of the federal, state and local governments are inadequate to meet total family needs, the American Red Cross may provide additional assistance.

AUTHORITIES AND REFERENCES

U. S. Public Law 4, 58th Congress, January 5, 1905

U. S. Public Law 93-288, Disaster Relief Act of 1974, Section 303

Memorandum of Understanding, October 1973, between the Federal Disaster Assistance Administration and the American National Red Cross, as amended, September 4, 1974 and December 2, 1975

Statement of Understanding between Defense Civil Preparedness Agency and the American National Red Cross, February 24, 1978

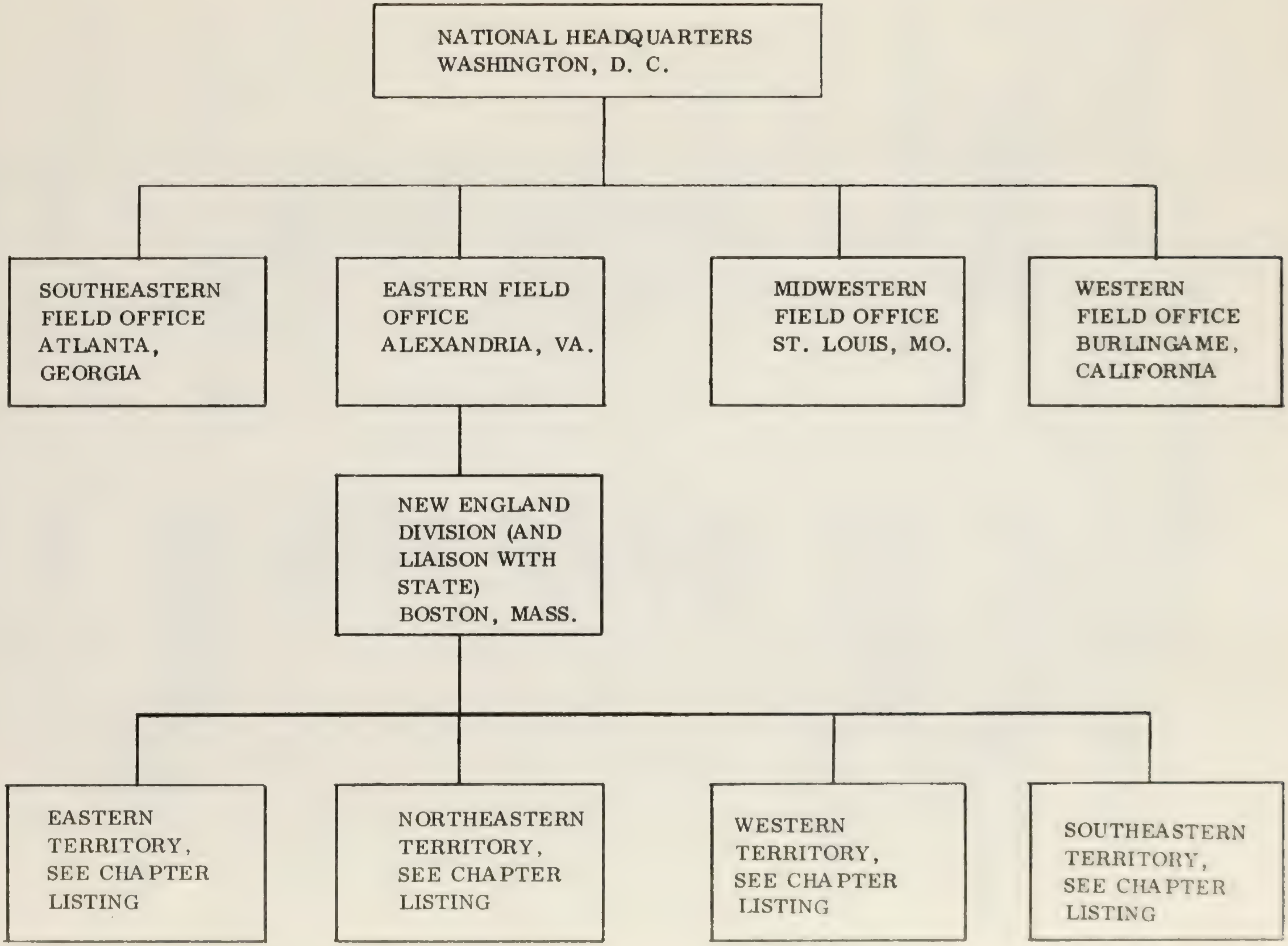
APPENDICES

Statement of Understanding between the Commonwealth of Massachusetts and the American National Red Cross - 1978

Organization Chart, American National Red Cross

Organization of Division and Chapters, Commonwealth of Massachusetts

AMERICAN NATIONAL RED CROSS ORGANIZATION CHART
DISASTER SERVICES


NATIONAL HEADQUARTERS
WASHINGTON, D. C.
SOUTHEASTERN FIELD OFFICE ATLANTA, GEORGIA
EASTERN FIELD OFFICE ALEXANDRIA, VA.
MIDWESTERN FIELD OFFICE ST. LOUIS, MO.
WESTERN FIELD OFFICE BURLINGAME, CALIFORNIA
NEW ENGLAND DIVISION (AND LIAISON WITH STATE) BOSTON, MASS.
EASTERN TERRITORY, SEE CHAPTER LISTING
NORTHEASTERN TERRITORY, SEE CHAPTER LISTING
WESTERN TERRITORY, SEE CHAPTER LISTING
SOUTHEASTERN TERRITORY, SEE CHAPTER LISTING

NEW ENGLAND DIVISION
AMERICAN RED CROSS

Acting Manager: Philip H. Chapman

Disaster Director: John P. Kwarciany
262-1234

Division Headquarters:
New England Division
99 Brookline Avenue
Boston, Massachusetts 02215

State Relations Representative:
Rita E. O'Donnell
262-4940

Eastern Massachusetts Territory:

Division Representative
99 Brookline Avenue
Boston, Massachusetts 02215
Rita E. O'Donnell
262-4940

Chapter	Location
Cambridge	Cambridge
Cohasset	Cohasset
Framingham	Framingham
Greater Boston	Boston
Greater Haverhill	Haverhill
Greater Lawrence	Lawrence
Greater Newburyport	Newburyport
Greater Quincy	Quincy
Hingham	Hingham
Hull	Hull
Milton	Milton
Natick	Natick
Needham	Needham
Scituate	Scituate
Waltham	Waltham
Wellesley	Wellesley
Weymouth	Weymouth

Northeastern Massachusetts Territory:

Division Representative
99 Brookline Avenue
Boston, Massachusetts 02215
Lance A. Hartford
262-4940

Chapter	Location
Greater Beverly	Beverly
Greater Danvers	Danvers
Greater Lynn	Lynn

Chapter	Location
Gloucester	Gloucester
Malden	Malden
Melrose	Melrose
Minuteman	Concord
Newton	Newton
Peabody	Peabody
Reading-North Reading	Reading
Rockport	Rockport
Salem	Salem
Stoneham	Stoneham
Wakefield	Wakefield
Weston	Weston
Winchester	Winchester

Western Territory:

Division Representative
275 Maple Street
Springfield, Massachusetts 01105
Richard J. Feinour
(413) 737-4306

Chapter	Location
Athol	Athol
Berkshire County	Pittsfield
Central Massachusetts	Worcester
Chicopee	Chicopee
Fitchburg	Fitchburg
Franklin County	Greenfield
Gardner	Gardner
Pioneer Valley	Springfield
Hampshire County	Northampton
Holyoke	Holyoke
Hudson	Hudson
Leominster	Leominster
Marlborough	Marlborough
Westfield	Westfield

Southeastern Territory:

Division Representative
154 Mill Street
Newport, Rhode Island 02840
Guy S. Sunny
(401) 846-8100

Chapter	Location
Attleboro	Attleboro
Cape Cod	Hyannis
Franklin	Franklin

Chapter	Location
Greater Fall River	Fall River
Mansfield	Mansfield
Martha's Vineyard	Edgartown
Nantucket	Nantucket
New Bedford	New Bedford
North Attleboro	North Attleboro
Old Colony	Brockton
Plymouth	Plymouth
Rockland	Rockland
Taunton	Taunton
Walpole	Walpole
Wrentham	Wrentham

ANNEX I: TEMPORARY HOUSING

I. INTRODUCTION

This Annex establishes responsibilities and procedures for providing temporary housing for those requiring such housing as a result of a disaster. The objective of temporary housing programs is to provide housing which meets minimum standards and is within reasonable commuting distance during that period of time necessary for repair or construction of permanent housing in the area, or relocation of displaced persons into other adequate housing.

II. RESPONSIBILITIES AND FUNCTIONS

A. Local

1. Local housing authorities, or other appropriate local officials, are responsible for:

   --Assessing damage, ascertaining habitability, and assessing the insurance situation with respect to private housing;

   --Developing listings of potential temporary housing and sites prior to emergency;

   --Cooperating and coordinating with appropriate private, State and Federal agencies in seeking financial assistance and temporary housing for disaster displaced victims.

2. Other local entities may be asked by State or local authorities to assist in efforts to identify or provide temporary housing or shelter. Apartment house owners associations, real estate brokers associations, motel owners associations, and trailer sales agencies are among those organizations whose assistance may be elicited.

B. State

1. Executive Office of Communities and Development

   --The Department of Community Affairs assists the Massachusetts Civil Defense Agency in determining the availability of temporary housing units by gathering and collating such information from local governments.

--Provides technical assistance to local governments in meeting Federal assistance requirements for site preparation for temporary housing, and in management of temporary housing under local control.

--Purchases, or otherwise acquires, temporary housing units from the Federal government; and sells, or otherwise makes available, such units to local housing authorities.

2. Executive Office of Consumer Affairs

--Provides inventories of temporary housing accommodations, through its administrative relationships with vendors and financing institutions.

--Provides information on suitable sites for placement of mobile and other temporary housing.

3. Bureau of Building Construction

Provides, at the direction of the Governor, for the construction of mobile homes sites and the installation of essential facilities (e.g. utilities and plumbing).

C. Federal

Pursuant to a declaration by the President that a major disaster exists, the U.S. Department of Housing and Urban Development (HUD) is authorized to provide the following:

--Temporary housing, either by purchase or lease, for those who as a result of the major disaster, require such housing;

--Funds for the repair or restoration of owner-occupied housing made uninhabitable by a disaster;

--Temporary assistance in the form of mortgage or rental payments to eligible individuals who have suffered financial hardship as a result of a major disaster.

III. CONCEPT OF OPERATIONS

Providing adequate temporary housing for disaster victims in mass shelters or other emergency situations involves several elements;

--Identifying persons whose existing housing either is permanently uninhabitable, or requires a lengthy period of time for restoration;

--Identifying existing available housing within reasonable commuting distance;

--In the absence of a sufficient stock of existing available housing, providing mobile or readily fabricated housing.

The responsibility for determining and meeting the need for temporary housing rests with local communities. State government and private relief organizations, when necessary, assist localities to the extent that resources and authority permit. The facilities of both State and Federal Disaster Assistance Centers (DACs, described in Part Two of this Plan) should be utilized to identify needs and programs.

IV. TASK ASSIGNMENTS

A. Local

Appropriate local agencies immediately activate emergency plans for assessing private housing damage, assessing the insurance situation, locating temporary housing, and listing vacant land suitable for temporary emergency housing placement. Such agencies function in cooperation with representatives of appropriate State, Federal and private agencies in efforts to provide temporary housing.

B. State

The State Coordinating Officer coordinates State and local efforts to provide housing sites, locate available housing and to set up and transport mobile homes. In particular:

1. The Executive Office of Communities and Development obtains, from local government officials, estimates of damage to community housing and an assessment of housing requirements. The Executive Office of Communities and Development collates listings of available rental homes and/or mobile housing sites in the communities.

2. The Board of Real Estate Brokers (Executive Office of Consumer Affairs) will obtain listings of vacant housing and available land for mobile or pre-fab housing.

3. The Bureau of Building Construction will supervise the construction of necessary mobile home sites and the installation of essential utility services.

4. The Executive Office of Communities and Development provides technical assistance to local governments in identifying Federal assistance programs for which they may be eligible, and in meeting and maintaining eligibility requirements.

ANNEX J: PLAN IMPLEMENTATION, UPDATING AND TRAINING

I. INTRODUCTION

This Annex establishes responsibilities and outlines tasks and procedures associated with implementing and updating the Massachusetts Comprehensive Emergency Response Plan, and for providing training in its provisions to officials of State agencies and of local government who have been assigned responsibilities through this Plan's provisions.

II. CONCEPT OF OPERATIONS

A. Effectiveness

The Massachusetts Comprehensive Emergency Response Plan becomes officially effective upon its formal promulgation by letter by the Governor.

Because, however, the Plan consists almost entirely of working agreements between and among local, State and Federal government, their agencies, and other agencies with emergency concerns, it has, in large measure, been partly or totally in effect over the two years prior to its completion and publication.

B. Implementation

Part One of this Plan defines several operational readiness levels (STANDBY, ALERT, and EMERGENCY OPERATIONS). Whenever Civil Defense assumes these levels, or advises other agencies or local governments to do so, the Plan has been implemented. Whenever the Governor declares a state of emergency, or executes the Plan through a request for a Presidential declaration (for which Plan execution is a requirement), the Plan also clearly has been implemented.

Because the organizational system the Plan reflects has informal application on a day-to-day basis, and in "routine" emergencies, it can be partially implemented at any time when its provisions or procedures are utilized by any agency of government.

C. Updating

Additions and revisions will be issued to holders periodically by the Massachusetts Civil Defense Agency (MCDA), and many of these, too, will reflect changes in procedure, policy, capabilities or resources that were effective before a Plan change is issued.

The objective with respect to updating the Plan will be to reflect as accurately as possible the capabilities of Massachusetts' emergency response forces, while simultaneously trying to upgrade those capabilities through improvements in the Plan.

D. Training

Massachusetts has no formal established training capability specifically for natural disaster preparedness or response, but considerable resources with application in this field. Training in the provisions and use of this Plan will therefore be accomplished through utilization of other disaster-related training opportunities (e.g. civil defense training seminars) or modification of agency-specific or other specialized training.

Priority will be given to training of State officials in agencies with key roles in the emergency organization, and to local emergency officials.

III. RESPONSIBILITIES

A. Implementation

Developing and maintaining the capabilities required to effectively implement this Plan requires the full participation of all levels of State and local government.

This Plan addresses preparedness, coordination, and response capabilities of State agencies, and provides the communications and administrative mechanism for liaison with local government. It does not, however, provide local planning. Because a large percentage of Massachusetts' emergency response capabilities are within the effective control of local government, the development of local emergency response plans consistent with the range of local responsibilities appearing throughout this Plan is a critical step in effective implementation.

B. Updating

1. Massachusetts Civil Defense Agency

The primary responsibility for maintenance and update of this Plan rests with the Massachusetts Civil Defense Agency (MCDA). Included in this responsibility are the following specific tasks:

a. Continuously survey all elements of the emergency response system, and identify areas where, because of changes in organization, resources, or legislation and authority, amendment to the Plan is necessary;

b. Maintain effective channels of communication with all levels of government, to permit timely notification of any requirement for improvement or modification;

c. Continuously survey the State so as to identify any changes in risk or vulnerability to specific disaster hazards;

d. Assist State agencies with emergency response functions, and local governments, in developing or refining their emergency plans;

e. Develop and maintain a system for publication, promulgation, and validation of receipt of Plan changes.

2. Inter-Secretariat Emergency Coordinating Committee

The responsibilities outlined for the Inter-Secretariat Emergency Coordinating Committee in Part Two, "Organization and Responsibilities," of this Plan imply a need for periodic review of this Plan, agency-specific emergency response plans, and agency response functions, to determine areas where change is needed or desirable.

3. State Agencies

State agencies with emergency response functions are responsible for:

a. Advising their respective representative to the Inter-Secretariat Emergency Coordinating Committee of potential or existing situations which require modification to the Plan;

b. Developing and improving agency-specific emergency plans.

4. Local Governments

Local governments are responsible for advising the Massachusetts Civil Defense Agency (MCDA), through their local civil defense director, of potential or existing situations at the local level which might require modification to the Plan.

C. Training

1. Massachusetts Civil Defense Agency

The Massachusetts Civil Defense Agency (MCDA) is tasked with providing training and education for local and State personnel engaged in civil preparedness functions. In support of this responsibility, MCDA operates a training academy for training of auxiliary police and fire personnel, and other emergency workers, conducts radiological response training, and makes available a broad range of training resources, including personnel, in support of local and other preparedness training. These activities, and others, support the following responsibilities:

a. Determine Statewide emergency preparedness training requirements, including those associated with dissemination of this Plan;

b. Plan, develop, and implement emergency preparedness training programs which meet State objectives, and maximally utilize all available resources, including Federal training resources:

c. Provide guidance to cities and towns in developing emergency preparedness training plans and programs;

d. Evaluate or assist in evaluating emergency training programs through conduct or participation in tests or drills.

2. State Agencies

a. Develop and conduct technical or skill courses which are within the purview of a particular agency;

b. Whenever possible, assist local governments in disaster preparedness planning, training, and the conduct of exercises.

3. Local Government

a. Determines total local emergency preparedness training requirements, including those associated with implementation of this Plan;

b. Develop a local emergency preparedness training program for emergency services personnel and local citizens;

c. In coordination with State and Federal agencies, conduct disaster preparedness training and testing of local staff and operating personnel on a periodic basis.

4. Federal

Various Federal agencies have assumed a broad range of responsibilities associated with training of local and State officials, or of citizens, in emergency preparedness and response areas. A few illustrative examples are:

a. Civil defense home study courses, offered by the Emergency Management Institute, Emmitsburg, MD; 1

b. Federal Emergency Management Agency (FEMA) preparedness courses offered within the region or State;

c. Technical assistance for natural disaster planning available from the Federal Emergency Management Agency (FEMA). 1

d. Various guidance and training available from the National Weather Service relative to weather-related disaster hazards.

5. American National Red Cross

The American National Red Cross (ANRC) has trained personnel who can give instruction in mass feeding, shelter management, damage assessment, first aid, health services, and emergency assistance to families.

IV. PROCEDURES

A. Training Associated with Implementation of the Massachusetts Comprehensive Emergency Response Plan

Guidance and training in the provisions and use of this Plan will be directed primarily toward operating officials in State agencies with important emergency response roles, and to local officials, particularly chief executives, and heads of local departments with emergency functions (police, fire, public works, health, etc.).

The mechanisms for conveying training are:

1. Specially scheduled training sessions and drills for specific State agencies;
2. Joint sessions and drills with representation by several agencies;
3. Seminars and reviews by the Inter-Secretariat Emergency Coordinating Committee;
4. Seminars for local civil defense directors;
5. Seminars for a broad range of local officials.

B. General Preparedness Training

1. Request Procedures

Procedures for delivery of general emergency response training available through the Massachusetts Civil Defense Agency (MCDA) are developed by that agency, which also maintains an awareness of other training and information, available through other State agencies or from the Federal government.

Requests for information on the availability of such training may be addressed to the Director, Massachusetts Civil Defense Agency, 400 Worcester Road, Framingham, 01701.

Requests from local officials for such information should originate with the local civil defense director, and be submitted through the concerned Civil Defense Area Director.

2. Supporting Resources

The Massachusetts Civil Defense Agency (MCDA) provides films, technical publications and related materials to schools, civic groups and other interested organizations.

COMMONWEALTH OF MASSACHUSETTS
COMPREHENSIVE EMERGENCY RESPONSE PLAN
APPENDIX 3
RADIOLOGICAL EMERGENCY RESPONSE PLAN
FOR
FIXED SITE NUCLEAR FACILITIES

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prepared by
Massachusetts Civil Defense Agency
and
Office of Emergency Preparedness
AND
Massachusetts Department of Public Health

Edward J. King
Governor

George A. Luciano
Secretary of Public Safety

Robert H. Cunningham
Civil Defense Director

Charles F. Mahoney
Secretary of Human Services

Alfred L. Frechette, M.D.
Commissioner of Public Health

COMMONWEALTH OF MASSACHUSETTS
COMPREHENSIVE EMERGENCY RESPONSE PLAN

APPENDIX 3 -- RADIOLOGICAL EMERGENCY RESPONSE PLAN
FOR
FIXED SITE NUCLEAR FACILITIES

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MASSACHUSETTS COMPREHENSIVE EMERGENCY RESPONSE PLAN
APPENDIX 3
RADIOLOGICAL EMERGENCY RESPONSE PLAN
FOR
FIXED NUCLEAR FACILITIES

OVERVIEW

The Radiological Emergency Response Plan for Fixed Nuclear Facilities (RERP) is an Appendix to the Massachusetts Comprehensive Emergency Response Plan. This arrangement reflects the fact that radiological emergencies at nuclear facilities are specialized kinds of emergencies, but that they have much in common with natural disaster and other man-caused emergency situations, in that many of the emergency response functions which must be carried out (warning, coordination of emergency services, etc.) are common to radiological and other emergencies.

The RERP is organized as follows:

Section A is the State Radiological Emergency Response Plan, and includes such material as authorities, emergency organization, provision for notification and warning, etc., and general information on radiation effects and Protective Action Guides (PAGs) for radiation emergencies.

Section B consists of Annexes to the State RERP, which describe responsibilities and procedures for implementation of various protective actions, such as evacuation or control of contaminated foodstuffs; for the provision of necessary emergency services support; and for RERP maintenance and training.

Sections C through E consist respectively of an Area plan for implementation of protective actions around each of the three nuclear power station sites which could affect Massachusetts, and local plans for each community within a ten-mile "plume exposure" Emergency Planning Zone (EPZ). Reception plans for host communities outside the ten-mile zone which would be receiving evacuees are also included in these Sections.

SECTION 1 PLANNING BASIS

A. PURPOSE

This Plan was developed to provide guidance and assistance to State and local officials with responsibilities for responding to radiological emergencies at nuclear power stations; to Federal or private agencies who are requested to assist in such response, and to individual citizens who may be at risk in the event of a radiological emergency at a nuclear power station.

B. AUTHORITY

1. The Civil Defense Act, Chapter 639, Acts of 1950, authorizes the Governor, acting through the Civil Defense Agency, to make plans for response to potential effects of any natural or man-caused disaster. Accidents at nuclear power stations which threaten or cause dangerous effects outside plant property fall within this latter category. The Civil Defense Act also authorizes State coordination of disaster response efforts by local governing authorities, who have primary authority and responsibility within their respective jurisdiction.

2. Section 5B of Chapter 111 of the General Laws of Massachusetts authorizes the Commissioner of Public Health to determine what actions are required to protect public health whenever an incident involving radioactive substances or sources affects any part of Massachusetts.

3. If the Commissioner of Public Health determines that an incident at any nuclear power station requires an emergency response, the Governor has two options:

   --He may declare an emergency in the affected areas under provisions of Section 5 of the Civil Defense Act, or;

   --He may declare a state of public health emergency, with the concurrence of the Public Health Council, under provisions of Section 2A of Chapter 17 of the General Laws. The Commissioner of Public Health then may direct State and local agencies to take appropriate action.

4. In each case, the Secretary of Public Safety acts, through the Massachusetts Civil Defense Agency (MCDA), as the Governor's coordinator of emergency response actions by State and local agencies, as authorized by the Civil Defense Act, set forth in the State Comprehensive Emergency Response Plan, and detailed in the hazard-specific supplement to that Plan for Emergency Response to Nuclear Incidents.

C. RESPONSIBILITIES

1. Each utility oeprating a nuclear power station is responsible to the U.S. Nuclear Regulatory Commission for developing emergency response capability for implementation within the plant boundary. In addition the company cooperates with local and State officials, hospitals, and other agencies in developing public capability for effective response in the event of any incident which might cause the release of radioactive materials in health-threatening quantities.

   Nuclear Power Stations, by virtue of their licensing agreements with the Federal Nuclear Regulatory Commission, and agreements with the Commonwealth have accepted responsibility for initiating the necessary immediate action required to:

   1. Limit the consequences of an incident;
   2. Evaluate the conditions and determine the magnitude of an incident;
   3. Immediately notify appropriate State and Federal agencies;
   4. Minimize public and plant personnel radiation exposure and/or injury; and,
   5. Take immediate steps to limit or reduce the loss to property.

2. The Massachusetts Commissioner of Public Health exercises primary technical responsibility for determining the nature and extent of any subsequent health hazard, and for determining what protective actions are to be taken.

3. The Massachusetts Civil Defense Agency, on behalf of the Governor and the Secretary of Public Safety, is responsible for coordinating State emergency response actions.

4. Other State agencies are responsible for providing support for emergency operations as set forth in Part One, "Agency Task Assignments", of the Massachusetts Comprehensive Emergency Response Plan, and in the Annexes to this Plan.

D. GUIDANCE

1. The general guidance issued by the U.S. Nuclear Regulatory Commission in a document titled NUREG-75/111 "Guide and Checklist for Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Fixed Nuclear Facilities" was used extensively in the development of this Plan.

2. The planning basis for this Plan was adopted, in large measure, from a report prepared jointly by the U.S. Nuclear Regulatory Commission and the U.S. Environmental Protection Agency titled NUREG-0396 "Planning Basis for the Development of State and Local Response Plans in Support of Light Water Nuclear Power Plants".

E. RADIATION EFFECTS

Radiation effects can be classified in two categories, early or delayed, but these categories are not mutually exclusive.

1. Early Effects

Early (acute) effects, occurring within 90 days, may include fatalities, symptoms of radiation sickness, or clinically detectable changes. Efforts to protect selected populations will extend to prevent of fatalities, minimization of symptoms of radiation sickness in radiation workers and public service personnel, and prevention of clinically detectable changes of uncertain significance in the rest of the population. The basis for decisions regarding early effects is not hard to justify because of the imminence of such effects. However, they must be made rapidly under conditions of competing needs to protect the public.

2. Delayed Effects

Delayed statistical effects (i.e., biological effects which can only be observed on a statistical basis) will occur at random in a population after exposure to released materials. These effects may be fatalities or disabilities of somatic or genetic origin. The incidence of these effects is estimated on the basis of statistical evaluation of epidemiological studies in groups of people who had been exposed to radiation. Decisions concerning statistical effects on populations will be more difficult because of the lack of immediacy of the effects. But in the long run, these effects might cause the greatest impact on the general population.

F. PROTECTIVE ACTION GUIDES

Protective Action Guides (PAG's) are the numerical projected doses which act as trigger points to initiate protective action. Protective actions are those actions which will be taken by State and local authorities following a nuclear incident that are intended to minimize the radiation exposure of the general public resulting from such incidents.

PAG's FOR LIMITING PUBLIC EXPOSURE TO AIRBORNE RADIOACTIVE MATERIALS

PAG's for limiting public exposure to airborne radioactive materials based upon guidelines provided by the U.S. Environmental Protection Agency in the document, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents", issued September 1975, have been adopted. Figure A1-1 summarizes these PAG's.

PAG's FOR LIMITING EXPOSURE FROM CONTAMINATED WATER

The concentrations in water in excess of concentrations listed in Column 2, Table II, Appendix B, Part 20 of the U.S. Nuclear Regulatory Commission Rules and Regulations, will be the basis for intensifying surveillance of water. If projected doses exceed 1 rem whole body or 5 rem thyroid, appropriate action will be taken.

PAG's FOR LIMITING EXPOSURE FROM CONTAMINATED HUMAN AND ANIMAL FEEDS

PAG's for limiting public exposure from accidental contamination of food and animal feeds are taken from the proposed Food and Drug Administration 21 CFR Part 1090, Docket #76N-0050, accidental radioactive contamination of food and animal feeds.

PAG's FOR DECONTAMINATION OF AREAS AND EQUIPMENT OF PUBLIC USE

Guidelines for residual surface contamination levels prior to release for unrestricted use are provided in the attached table, "Surface Contamination Levels". The tables were taken from guidelines issued April 2, 1970, by the U.S. Atomic Energy Commission and will be the basis for accomplishing the decontamination and survey of surfaces of premises and equipment of public use pending development of EPA guidance on PAG's for contaminated property and equipment.

PAG's FOR RE-ENTRY INTO AN AFFECTED AREA FOR RE-OCCUPANCY

When the radiation level and radioactivity concentration is below Massachusetts RPG Table 3, re-entry by the general public shall be permitted by the MCDA.

A higher limit may be allowed for limited re-entry of selected individuals on a case-by-case basis. (See Attachment B5-1 to Annex 5.)

PROTECTIVE ACTIONS

The ideal goal of protective action in an emergency is complete protection of the endangered population. However, various constraints may prevent attaining this ideal, so a more realistic goal is minimization of harmful effects.

Figure A.1-1

Recommended protective actions to avoid whole body and thyroid dose from exposure to a gaseous plume.

Projected Dose (Rem) to the Population	Recommended Actions[a]	Comments
Whole body <1 Thyroid <5	·No protective action required. ·State may issue an advisory to seek shelter and await further instructions or to voluntarily evacuate. ·Monitor environmental radiation levels.	Previously recommended protective actions may be reconsidered or terminated.
Whole body 1 to <5 Thyroid 5 to <25	·Seek shelter and wait further instructions. ·Consider evacuation particularly for children and pregnant women. ·Monitor environmental radiation levels. ·Control access.	
Whole body 5 and above Thyroid 25 and above	·Conduct mandatory evacuation of populations in the predetermined area. ·Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. ·Control access.	Seeking shelter would be an alternative if evacuation were not immediately possible.
Projected Dose (Rem) to Emergency Team Workers		
Whole body 5 - 25 Thyroid 125	·Control exposure of emergency team members to these levels except for lifesaving missions. (Appropriate controls for emergency workers, include time limitations, respirators, and stable iodine.)	Although respirators and stable iodine should be used where effective to control dose to emergency team workers, thyroid dose may not be a limiting factor for lifesaving missions.
Whole body 75	·Control exposure of emergency team members performing lifesaving missions to this level. (Control of time of exposure will be most effective.)	

[a] These actions are recommended for planning purposes. Protective action decisions at the time of the incident must take into consideration the impact of existing constraints.

In the case of an emergency involving a radiological hazard, efforts are directed towards minimizing:

(1) early somatic effects such as death within days or development of extensive symptoms of radiation sickness;

(2) delayed somatic effects, such as increased probability of death due to radiation related cancer; and,

(3) genetic effects such as increased prenatal mortality or increased probability of hereditary defects in future generations.

The minimization of effects implies that the radiation exposure under consideration is an avoidable exposure. However, for purposes of determiniming whether to take a protective action on the basis of projected dose from an airborne plume, the projected dose should not include unavoidable dose that has been received prior to the time the dose projection is made.

Figure A1-2 summarizes approximate initiation times for protective actions to be initiated. Protective actions are described fully in Sections B.1 and B.2 of this Plan.

Figure A.1.2 Initiation Times for Protective Actions

Approximate Initiation Time	Exposure Pathway	Action to be Initiated
0-4 hours	inhalation of gases or particulates	evacuation, shelter, access control, respiratory protection, prophylaxis (thyroid protection)
	direct radiation	evacuation, shelter, access control
4-48 hours	milk	take cows off pasture, prevent cows from drinking surface water, quarantine contaminated milk
	harvested fruits and vegetable	wash all produce, or impound produce
	drinking water	cut off contaminated supplies, substitute from other sources
	unharvested produce	delay harvest until approved
2-14 days	harvested produce	substitute uncontaminated produce
	milk	discard or divert to stored products, such as cheese
	drinking water	filter, demineralize

SECTION 2 WARNING AND COMMUNICATIONS

A. INTRODUCTION

This Section describes responsibilities and procedures associated with: assuring rapid and effective notification to State and local authorities of actual or potential emergency situations at the facility; assuring rapid notification of the public within ten miles of the facility of an emergency situation; and assuring effective communications among emergency response supporting organizations, between and among contiguous States, and among facility operators and appropriate State and local governments.

B. EMERGENCY COMMUNICATIONS

1. Comprehensive Emergency Communications Plan

Massachusetts emergency warning and communications systems are described in detail in Attachment 1 to Part One of the Massachusetts Comprehensive Emergency Response Plan (CERP). Tab A to Attachment 1 lists communications capabilities available at the State Emergency Operating Center in Framingham. The State EOC can communicate directly with any Area EOC via voice radio (civil defense administrative net), microwave, teletype, or National Attack Warning System (NAWAS). Area EOCs maintain most of the communications channels available at the State EOC, and are also in direct communication with communities via NAWAS, RACES, and law enforcement nets. The direct links between the State EOC and local governments are via NAWAS, RACES, and LEAPS (through State Police).

Tab C to Attachment 1 of the CERP lists NAWAS substate warning points.

2. Special Provisions -- Communications for Radiological Emergency

The following special emergency communications provisions have been implemented in support of the Radiological Emergency Response Plan (RERP).

a. Communications between the Utility and State/Local Government

(1) The Vermont Yankee Nuclear Power Station (NPS) control room is equipped with voice radio communications (Tri-State Mutual Fire Network) with all Massachusetts evacuation and reception communities.

(2) Vermont Yankee NPS and Yankee Rowe NPS have installed microwave links with State Police Headquarters, Boston; Pilgrim NPS has installed a microwave link with Massachusetts State Police Barracks at Middleborough.

(3) Each NPS has installed unlisted telephones in the facility ECC for the use of State Department of Public Health personnel for incident verification and intelligence gathering.

(4) Pilgrim NPS and Plymouth local civil defense are equipped with NRC dedicated telephone system.

b. State Agency Field Communications

(1) Key MCDA and DPH personnel have been equipped with State Police activated tone alerts (beepers).

(2) Three DPH vehicles have been equipped with mobile transceivers on the civil defense administrative frequency. A total of 13 CD radio-equipped vehicles is available for field assessment communications support.

(3) Ten hand held transceivers on the civil defense frequency have been acquired, and are available for field communications and field to mobile communications by field monitoring and assessment teams.

C. BASIS FOR NOTIFICATION

The Nuclear Regulatory Commission issued new draft guidelines in September, 1979, on the bases upon which facilities must initiate notification to States and localities. Massachusetts has adopted these guidelines as a notification basis, and will seek the facility operators' agreement to utilize them pending final NRC rulemaking and approval of amendments to the facilities' emergency plans.

These Emergency Action Levels appear on the following pages.

EMERGENCY ACTION LEVELS

The four emergency action levels discussed on the following pages have been adapted from (DRAFT) EMERGENCY ACTION LEVEL GUIDELINES FOR NUCLEAR POWER PLANTS (NUREG - 0610) September 1979. Some modification to the emergency action levels may occur subsequent to NRC rulemaking scheduled for completion in January 1980.

The four classifications of emergency action levels for this plan are:

1. NOTIFICATION OF UNUSUAL EVENT - CONDITION 1
2. ALERT - CONDITION 2
3. SITE EMERGENCY - CONDITION 3
4. GENERAL EMERGENCY - CONDITION 4

NOTIFICATION AND ALERT: (CONDITIONS 1 & 2) provide early and prompt notification of minor events which could lead to more serious conditions given operator error or equipment failure or which might be symptomatic of more serious situations not yet fully realized.

SITE EMERGENCY: (CONDITION 3) conditions where some significant releases are likely or are occuring, but where core degradation is not indicated by current information.

GENERAL EMERGENCY: (CONDITION 4) most serious condition; actual or imminent substantial core degradation or melting with the potential for loss of containment. The IMMEDIATE ACTION for this class is SHELTERING rather than evacuation until an assessment can be made to determine (a) evacuation is indicated, and/or (b) an evacuation, if indicated, can be completed prior to significant release and transport of radioactive material to affected areas.

EMERGENCY ACTION LEVELS

DEFINITIONS

BWR	Boiling Water Reactor
ECC	Emergency Control Center
ECCS	Emergency Core Cooling System
EOC	Emergency Operating Center
IFO	Incident Field Office
LOCA	Loss of Coolant Accident
PWR	Pressure Water Reactor
RHR	Residual Heat Removal
SCRAM	Fast Shut Down
VYNPS	Vermont Yankee Nuclear Power Station
YRNPS	Yankee Rowe Nuclear Power Station
PNPS	Pilgrim Nuclear Power Station

CONDITION 1 -- NOTIFICATION OF UNUSUAL EVENT

DESCRIPTION:	Unusual events are in process or have occurred which indicate a potential degradation of plant safety levels.
PURPOSE:	1. Assure that the first step in any response later found to be necessary has been carried out. 2. Provide current information on unusual events. 3. Provide for periodic, unscheduled tests of the offsite communications system.
RELEASE POTENTIAL:	No releases of radioactive material expected unless further degradation of safety systems occurs.

A. LICENSEE ACTIONS

1. Immediate notification to Department of Public Health (DPH) via telephone or through microwave link with State Police.

2. Immediate notification to Plymouth Police (PNPS only). Notify Rowe Police or fire if assistance necessary (YRPS).

B. OFFSITE AUTHORITY ACTION

1. State Police will notify DPH via telephone or beeper; DPH will call the power station to determine nature of condition.

2. Local agencies to provide fire or security assistance as needed.

3. DPH will alert Civil Defense as to the nature of the incident, and, if warranted, recommend that MCDA assume a STANDBY status until close-out.

4. DPH representative(s) may be dispatched to plant site.

5. Close-out must be concurred to (verbally) by DPH authorities before notification of close-out is issued.

EXAMPLE INITIATING CONDITIONS: NOTIFICATION OF UNUSUAL EVENT

1. ECCS initiated *
2. Radiological effluent technical specification limits exceeded
3. Fuel damage indication. Examples:
    a. High offgas at BWR air ejector monitor (greater than 500,000 μci/sec; corresponding to 16 isotopes decayed to 30 minutes; or an increase of 100,000 μci/sec within a 30 minute time period)
    b. High coolant activity sample (e.g., exceeding coolant technical specifications for iodine spike)
    c. Failed fuel monitor (PWR) indicates increase greater than 0.1% equivalent fuel failures within 30 minutes.
4. Abnormal coolant temperature and/or pressure or abnormal fuel temperatures
5. Exceeding either primary/secondary leak rate technical specification or primary system leak rate technical specification
6. Failure of a safety or relief valve to close
7. Loss of offsite power or loss of onsite AC power capability
8. Loss of containment integrity requiring shutdown by technical specifications
9. Loss of engineered safety feature or fire protection system function requiring shutdown by technical specifications (e.g., because of malfunction, personnel error or procedural inadequacy)
10. Fire lasting more than 10 minutes
11. Indications or alarms on process or effluent parameters not functional in control room to an extent requiring plant shutdown or other significant loss of assessment or communication capability (e.g., plant computer, all meteorological instrumentation)
12. Security threat or attempted entry or attempted sabotage
13. Natural phenomenon being experienced or projected beyond usual levels
    a. Any earthquake
    b. 50 year flood or low water, tsunami, hurricane surge, seiche
    c. Any tornado near site
    d. Any hurricane

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* Emergency Core Cooling System

14. Other hazards being experienced or projected
    a. Aircraft crash on-site or unusual aircraft activity over facility
    b. Train derailment on-site
    c. Near or onsite explosion
    d. Near or onsite toxic or flammable gas release
    e. Turbine failure
15. Other plant conditions exist that warrant increased awareness on the part of State and/or local offsite authorities or require plant shutdown under technical specification requirements or involve other than normal controlled shutdown (e.g., cooldown rate exceeding technical specification limits, pipe cracking found during operation)
16. Transportation of contaminated injured individual from site to offsite hospital
17. Rapid depressurization of PWR secondary side.

CONDITION 2 -- ALERT

DESCRIPTION:	Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant.
PURPOSE:	1. Assure that emergency personnel are readily available to respond if the situation becomes more serious or to perform confirmatory radiation monitoring if required. 2. Provide offsite authorities with current status information. 3. Provide possible unscheduled tests of response center activation.
RELEASE POTENTIAL:	Limited releases of up to 10 curies of I-131 equivalent or up to 10^4 curies of Xe-133 equivalent.

A. LICENSEE ACTIONS

1. Immediate notification (CODE YELLOW) to the states via emergency microwave or commercial telephone net.

2. Immediate notification to local governments via Tri-State, or to Plymouth Police (PNPS), and Mutual Fire Aid radio (VYNPS).

3. Activate on-site Emergency Control Center (ECC).

4. Dispatch monitoring teams and communications.

5. Provide periodic plant status updates to offsite authorities (at least every 15 minutes).

6. Provide initial site meteorological data to State EOC and,

7. Dose estimates for actual releases if any releases are occurring or are likely to occur.

8. Close out by verbal summary to offsite authorities (per B.6 below) followed by written summary within 8 hours.

   or

9. Escalate to a more serious CONDITION.

B. STATE/LOCAL ACTION

1. a. State Police will utilize NAWAS (VYNPS, YRNPS) or police nets (PNPS) to alert MCDA and localities (see Area plans);

   b. State Police will use telephone (alternate Beeper 97) to alert DPH;

   c. Back-up notification will be in accordance with Area plans (Sections C, D and E).

2. Activate State EOC, Area EOC and local EOCs.

3. Local/State agencies to provide fire or security assistance if necessary.

4. Provide confirmatory offsite radiation monitoring and ingestion pathway dose projections if release levels warrant.

5. Dispatch DPH representatives to plant site.

6. Close-out of alert status must be concurred with by DPH officials before notice or close-out is issued.

   or

7. Escalate to a more serious CONDITION.

EXAMPLE INITIATING CONDITIONS: ALERT

1. Severe loss of fuel cladding
    a. High offgas at BWR air ejector monitor (greater than 5 ci/sec; corresponding to 16 isotopes decayed 30 minutes)
    b. Very high coolant activity sample (e.g., 300 µci/cc equivalent of I-131)
    c. Failed fuel monitor (PWR) indicates increase greater than 1% fuel failures within 30 minutes or 5% total fuel failures.
2. Rapid gross failure of one steam generator tube with loss of offsite power
3. Rapid failure of more than 10 steam generator tubes (e.g., several hundred gpm primary to secondary leak rate)
4. Steam line break with significant (e.g., greater than 10 gpm) primary to secondary leak rate or MSIV malfunction
5. Primary coolant leak rate greater than 50 gpm
6. High radiation levels or high airborne contamination which indicate a severe degradation in the control of radioactive materials (e.g., increase of factor of 1000 in direct radiation readings)
7. Loss of offsite power and loss of all onsite AC power
8. Loss of all onsite DC power
9. Coolant pump seizure leading to fuel failure
10. Loss of functions needed for plant cold shutdown
11. Failure of the reactor protection system to initiate and complete a scram which brings the reactor subcritical
12. Fuel damage accident with release of radioactivity to containment or fuel handling building
13. Fire potentially affecting safety systems
14. All alarms (annunciators) lost
15. Radiological effluents greater than 10 times technical specification instantaneous limits (an instantaneous rate which, if continued over 2 hours, would result in about 1 mr at the site boundary under average meteorological conditions)
16. Ongoing security compromise

17. Severe natural phenomena being experienced or projected
    a. Earthquake greater than OBE levels
    b. Flood, low water, tsunami, hurricane surge, seiche near design levels
    c. Any tornado striking facility
    d. Hurricane winds near design basis level
18. Other hazards being experienced or projected
    a. Aircraft crash on facility
    b. Missile impacts from whatever source on facility
    c. Known explosion damage to facility affecting plant operation
    d. Entry into facility environs of toxic or flammable gases
    e. Turbine failure causing casing penetration
19. Other plant conditions exist that warrant precautionary activation of technical support center and near-site emergency operations center
20. Evacuation of control room anticipated or required with control of shutdown systems established from local stations

CONDITION 3 -- SITE EMERGENCY

DESCRIPTION:	Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public.
PURPOSE:	Purpose of the site emergency warning is to: 1. Assure that response centers are manned. 2. Assure that monitoring teams are dispatched. 3. Assure that personnel required for evacuation of near-site areas are at duty stations if situation becomes more serious. 4. Provide current information for and consultation with offsite authorities and public. 5. Provide possible unscheduled test of response capabilities.
RELEASE POTENTIAL:	Releases of up to 1000 ci of I-131 equivalent or up to 10^6 ci of Ce-133 equivalent.

A. LICENSEE ACTIONS

1. Immediate notification to the states via emergency microwave or commercial telephone net.

2. Immediate notification to local government via Tri-State (VYNPS), Plymouth Police (PNPS) or via NAWAS through State Police (YRNPS).

3. Activate on-site Emergency Control Center (ECCO and near site-EOC).

4. Dispatch monitoring teams and communications.

5. Provide periodic plant status updates to offsite authorities (at least every 15 minutes).

6. Provide initial site meteorological data to State EOC and,

7. Dose estimates for actual releases if any releases are occurring or likely to occur.

8. Close-out by verbal summary to offsite authorities (per B below) followed by written summary within 8 hours.

   or

9. Escalate to a more serious CONDITION.

B. STATE/LOCAL ACTION

1. a. State Police will utilize NAWAS (VYNPS), YRNPS) or police nets (PNPS)

to alert MCDA and localities (see Area plans);

b. State Police will use telephone (alternate Beeper 97) to alert DPH;

c. Back-up notification will be in accordance with Area plans (Sections C, D and E).

2. Activate State EOC, Area EOC and local EOCs.

3. Local/State agencies to provide fire or security assistance if necessary.

4. Provide confirmatory offsite radiation monitoring and ingestion pathway dose projections if release levels warrant.

5. Dispatch DPH representatives to plant site.

6. Close-out of alert status must be concurred with by DPH officials before notice or close-out is issued.

or

7. Escalate to a more serious CONDITION.

EXAMPLE INITIATING CONDITIONS: SITE EMERGENCY

1. Known loss of coolant accident greater than makeup pump capacity
2. Degraded core with possible loss of coolable geometry (indicators should include instrumentation to detect inadequate core cooling, coolant activity and/or containment radioactivity levels)
3. Rapid failure of more than 10 steam generator tubes with loss of offsite power
4. BWR steam line break outside containment without isolation
5. PWR steam line break with greater than 50 gpm primary to secondary leakage and indication of fuel damage
6. Loss of offsite power and loss of onsite AC power for more than 15 minutes
7. Loss of all vital onsite DC power for more than 15 minutes
8. Loss of functions needed for plant hot shutdown
9. Major damage to spent fuel in containment or fuel handling building (e.g., large object damages fuel or water loss below fuel level)
10. Fire affecting safety systems
11. All alarms (annunciators) lost for more than 15 minutes and plant is not in cold shutdown or plant transient initiated while all alarms lost
12. a. Effluent monitors detect levels corresponding to greater than 50 mr/hr for 1/2 hour or greater than 500 mr/hr W.B. for two minutes (or five times these levels to the thyroid) at the site boundary for adverse meteorology

    b. These dose rates are projected based on other plant parameters (e.g., radiation level in containment with leak rate appropriate for existing containment pressure) or are measured in the environs
13. Imminent loss of physical control of the plant
14. Severe natural phenomena being experienced or projected with plant not in cold shutdown

    a. Earthquake greater than SSE levels

    b. Flood, low water, tsunami, hurricane surge, seiche greater than design levels or failure of protection of vital equipment at lower levels

    c. Winds in excess of design levels

15. Other hazards being experienced or projected with plant not in cold shutdown
    a. Aircraft crash affecting vital structures by impact or fire
    b. Severe damage to safe shutdown equipment from missiles or explosion
    c. Entry of toxic or flammable gases into vital areas
16. Other plant conditions exist that warrant activation of emergency centers and monitoring teams and a precautionary public notification
17. Evacuation of control room and control of shutdown systems not established from local stations in 15 minutes

CONDITION 4 -- GENERAL EMERGENCY

DESCRIPTION:	Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity.
PURPOSE:	1. Initial pre-determined protective actions for the public. 2. Provide continuous assessment of information from licensee and offsite measurements. 3. Initiate additional measures as indicated by actual or projected releases. 4. Provide current information for and consultation with offsite authorities and public information concerning event status.
RELEASE POTENTIAL:	Releases of more than 1000 ci of I-133 equivalent or more than 10^6 ci of Xe-133 equivalent.

A. LICENSEE ACTIONS

1. Immediate notification to the states via emergency microwave or commercial telephone net.
2. Immediate notification to local governments via Tri-State (VYNPS), Plymouth Police (PNPS) or via NAWAS through State Police.
3. Activate onsite ECC and near-site EOC.
4. Dispatch onsite and offsite monitoring teams and communications.
5. Provide a dedicated individual for plant status updates to offsite authorities and periodic press briefings (recommended joint with offsite authorities).
6. Senior technical and management staff to be available onsite for consultation with NRC and state(s) on a routine basis.
7. Provide initial site meteorological data to State EOC and,
8. Dose estimates for actual releases or projected releases.
9. Provide release and dose projections based on current plant condition and foreseeable contingencies.
10. Close-out or recommend reduction of emergency status to offsite authorities (See B below) followed by written summary within 8 hours.

NOTE: Close-out or status reduction may occur when:

1) Plant indicates successful reduction of emergency condition, and,
2) Offsite monitoring (both plant and offsite authorities) produces no measurable (above background) radiation.

B. STATE/LOCAL ACTIONS

1. Provide any assistance requested.
2. Activate immediate public notification of emergency status and provide public periodic updates.
3. Recommend sheltering for 2 mile radius and 5 miles downwind and assess need to extend distances.
4. Augment resources by activating near-site EOC and any other primary response centers.
5. Dispatch key emergency personnel including monitoring teams and associated communications.
6. Dispatch other emergency personnel to duty stations within 5 mile radius and alert all others to standby status.
7. Provide offsite monitoring results to licensee and others and jointly assess these.
8. Continuously assess information from licensee and offsite monitoring with regard to changes to protective actions already initiated for public and mobilizing evacuation resources.
9. Recommend placing milk animals within 10 miles on stored feed and assess need to extend distance.
10. Provide press briefings, perhaps with licensee.
11. Consider relocation to alternate EOC if actual dose accumulation in near-site EOC exceeds lower bound of EPA PAGs.
12. Maintain general emergency status until close-out or reduction of emergency condition.

EXAMPLE INITIATING CONDITIONS: GENERAL EMERGENCY

1. a. Effluent monitors detect levels corresponding to 1 rem/hr W.B. or 5 rem/hr thyroid at the site boundary under actual meteorological conditions

   b. These dose rates are projected based on other plant parameters (e.g., radiation levels in containment with leak rate appropriate for existing containment pressure with some confirmation from effluent monitors) or are masured in the environs.

   Note: Consider evacuation only within about 2 miles of the site boundary unless these levels are exceeded by a factor of 10 or projected to continue for 10 hours

2. Loss of 2 of 3 fission product barriers with a potential loss of 3rd barrier, (e.g., loss of core geometry and primary coolant boundary and high potential for loss of containment).

   Note: Consider 2 mile precautionary evacuation. If more than gap activity released, extend this to 5 miles downwind.

3. Loss of physical control of the facility.

   Note: Consider 2 mile precautionary evacuation.

4. Other plant conditions exist, from whatever source, that make release of large amounts of radioactivity in a short time period possible, e.g., any core melt situation. See the specific PWR and BWR sequences.

   Notes: a. For sequences where significant releases are not yet taking place and large amounts of fission products are not yet in the containment atmosphere, consider 2 mile precautionary evacuation. Consider 5 mile downwind evacuation (45^{o} to 90^{o} sector) if large amounts of fission products are in the containment atmosphere. Recommend sheltering in other parts of the plume exposure Emergency Planning Zone under this circumstance.

   b. For sequences where significant releases are not yet taking place and containment failure leading to a direct atmospheric release is likely in the sequence but not imminent and large amounts of fission products in addition to noble gases are in the containment atmosphere, consider precautionary evacuation to 5 miles and 10 mile downwind evacuation (45^{o} to 90^{o} sector).

   c. For sequences where large amounts of fission products other than noble gases are in the containment atmosphere and containment failure is judged imminent, recommend shelter for those areas where evacuation cannot be completed before transport of activity to that location.

d. As release information becomes available adjust these actions in accordance with dose projections, time available to evacuate and estimated evacuation times given current conditions.

EXAMPLE PWR SEQUENCES

1. Small and large LOCA's with failure of ECCS to perform leading to severe core degradation or melt. Ultimate failure of containment likely for melt sequences. (Several hours available for response)

2. Transient initiated by loss of feedwater and condensate systems (principal heat removal system) followed by failure of emergency feedwater system for extended period. Core melting possible in several hours. Ultimate failure of containment likely if core melts.

3. Transient requiring operation of shutdown systems with failure to scram. Core damage for some designs. Additional failure of core cooling and makeup systems would lead to core melt.

4. Failure of offsite and onsite power along with total loss of emergency feedwater makeup capability for several hours. Would lead to eventual core melt and likely failure of containment.

5. Small LOCA and initially successful ECCS. Subsequent failure of containment heat removal systems over several hours could lead to core melt and likely failure of containment.

NOTE: Most likely containment failure mode is meltthrough with release of gases only for dry containment; quicker and larger releases likely for ice condenser containments for melt sequences or for failure of containment isolation system for any PWR.

EXAMPLE BWR SEQUENCES

1. Transient (e.g., loss of offsite power) plus failure of requisite core shut down systems (e.g., scram or standby liquid control system). Could lead to core melt in several hours with containment failure likely. More severe consequences if pump trip does not function.

2. Small or large LOCA's with failure of ECCS to perform leading to core melt degradation or melt. Loss of containment integrity may be imminent.

3. Small or large LOCA occurs and containment performance is unsuccessful affecting longer term success of the ECCS. Could lead to core degradation or melt in several hours without containment boundary.

4. Shutdown occurs but requisite decay heat removal systems (e.g., RHR) or non-safety systems heat removal means are rendered unavailable. Core degradation or melt could occur in about ten hours with subsequent containment failure.

5. Any major internal or external events (e.g., fires, earthquakes, etc.) which could cause massive common damage to plant systems resulting in any of the above.

D. INITIAL ALERT

1. The initial alert will come to the State Police at Boston (Vermont Yankee, Yankee Rowe), or at Middleborough (Pilgrim) via microwave. Message content appears in Attachment A2-1.

2. State Police will use NAWAS with telephone back-up (Vermont Yankee, Yankee Rowe) or telephone, LEAPS and NAWAS back-up (Pilgrim) to alert local officials and telephone (beeper, CD radio back-up) to alert the Department of Public Health. Message content appears in Attachment A2-1.

3. Initial notification diagrams appear in each Area plan, indicating back-up notification procedures (Fire Mutual Aid, County Police, Civil Defense) for assuring that each community is alerted.

4. The DPH official responding to the State Police will call the facility EOC on a dedicated unlisted phone to receive plant status and meteorological information.

   Back-up communications from the Department of Public Health to the facility is through MCDA to the State Police (radio link) and via microwave from the State Police to the facility control room.

THE PURPOSE OF THIS INITIAL ALERTING PROCEDURE IS TO PLACE A KNOWLEDGEABLE DPH OFFICIAL IN COMMUNICATION WITH A KNOWLEDGEABLE FACILITY OFFICIAL, AND THEREBY AVOID MISUNDERSTANDING OF THE SITUATION AND SUBSEQUENT CONFUSION. THIS PROCEDURE IS ROUTINELY ACCOMPLISHED WITHIN FIVE MINUTES DURING DRILLS.

E. FACILITY STATUS INFORMATION

Upon receipt of the verification call from DPH to the facility control room or ECC, the facility shall, at a minimum, provide the information items listed below:

1. Location of incident and name and telephone number (or communications channel identification) of caller.

2. Date/time of incident.

3. Type of release (airborne, waterborne, surface spill), and estimated duration/impact times.

4. Estimate of quantity of radioactive material released or being released and the height of release.

5. Chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines and particulates.

6. Prevailing weather (wind velocity, direction, temperature, atmospheric stability data, form of precipitation, if any).

7. Projected whole body and thryoid dose at site boundary.

8. Projected dose range for low population zone including sector(s) of zone affected.

9. Estimate of radioactive contamination if environmental surfaces are involved.

10. Emergency response procedures in effect.

11. Further emergency actions recommended, including protective measures.

12. Injured personnel requiring off-site assistance.

13. Verification that control room procedures to mitigate the consequences are being or have been correctly carried out.

F. NOTIFICATION OF KEY AGENCIES

1. Massachusetts Civil Defense Agency (MCDA) will notify the following of a STANDBY, ALERT, or EMERGENCY OPERATIONS condition, depending upon the situation, by telephone using Operations Room Directory call list:

    a. Secretary of Public Safety, and through the Secretary, the Governor (back-up -- State Police radio to Capitol Police);

    b. Department of Public Works, Boston Operations Room (back-up -- DPW radio);

    c. State Police Civil Defense Liaison (back-up -- State Police radio);

    d. Contiguous State Civil Defense via CD NAVS;

    e. Department of Environmental Management (back-up -- Environmental Affairs Law Enforcement net);

    f. National Guard (back-up -- MNG net);

    g. Massachusetts Wing, Civil Air Patrol;

    h. Red Cross.

The appropriate Area EOC will notify corresponding Agency area and district offices of the emergency action level, including notification to the appropriate State Police Troop.

2. Massachusetts Department of Public Health (DPH) will notify the following of the situation by telephone, with periodic updates as appropriate to that Agency:

   a. Commissioner of Public Health, and through the Commissioner, the Secretary of Human Services and the Governor;

   b. NIAT Team members;

   c. Massachusetts Civil Defense;

   d. IRAP (Brookhaven);

   e. Department of Food and Agriculture;

   f. Environmental Protection Agency;

   g. Food and Drug Administration;

   h. Contiguous State Health Departments;

   i. Nuclear Regulatory Commission.

   The content of DPH notification to other State Health Departments and to the above agencies will be all available information from the facility, reported in the order and format of Section A.2.E above.

3. Local Officials

   Notification fan-outs and lists at the local level appear in each local plan in Sections C, D and E.

G. PUBLIC NOTIFICATION AND WARNING

Provisions for rapid and effective initial alert and notification of protective action are made in each local plan appearing in Sections C, D, and E. and in provisions of Section A.4, "Public Information".

H. ADDITIONAL PROVISIONS

Upon notification of a SITE or GENERAL emergency, or upon notification by the Department of Public Health that plant status warrants such action, MCDA will dispatch a vehicle with radio to the facility ECC to back-up existing communications capability.

Attachment A.2-1

INITIAL ALERT — SAMPLE STANDARD MESSAGE CONTEXT
(Vermont Yankee Nuclear Power Station)

1. Content of facility message to State Police (received via microwave, telephone, back-up, Tri-State Fire Mutual Aid voice radio redundancy to localities):

   THIS IS NOT A DRILL...I REPEAT, THIS IS NOT A DRILL. THIS IS VERMONT YANKEE NUCLEAR POWER STATION, VERNON. WE HAVE A CODE YELLOW. I SAY AGAIN, WE HAVE A CODE YELLOW. THIS IS NOT A DRILL. I REPEAT, THIS IS NOT A DRILL.

2. Content of State Police Message to Civil Defense, Localities, and DPH (NAWAS; telephone, police net, CD nets, back-up — telephone(beeper alert) to DPH):

   ATTENTION FOLLOWING NAWAS POINTS: MASSACHUSETTS CIVIL DEFENSE, GREENFIELD FIRE. PLEASE ACKNOWLEDGE.

   (following acknowledgement)

   THIS IS NOT A DRILL. REPEAT. THIS IS NOT A DRILL. GREENFIELD FOR RELAY TO NORTHFIELD, BERNARDSTON, WARWICK, GILL, COLRAIN, LEYDEN. MESSAGE FOLLOWS:

   VERMONT YANKEE NUCLEAR POWER STATION, VERNON, REPORTS AT _____ HOURS THAT THEY HAVE A CODE YELLOW. REPEAT, A CODE YELLOW. THIS IS NOT A DRILL. REPEAT. THIS IS NOT A DRILL.

SECTION 3 COORDINATION OF EMERGENCY OPERATIONS

A. INTRODUCTION

This Section describes several concepts which are key to the successful conduct of response operations during a radiological emergency. Emergency response operations in general, and the utilization of State and local agency personnel and resources, are thoroughly described in Part One of the Massachusetts Comprehensive Emergency Response Plan (CERP) and in the "Coordination of Emergency Operations" Section of Attachment 1 thereto. These coordination mechanisms and emergency response supporting arrangements have been thoroughly tested during several major natural disasters and emergencies.

B. CONCEPTS

1. Role of the Governor

The Governor's authorities following a declaration of emergency under the provisions of Section 5 of the Civil Defense Act are very broad, and include the authority to direct evacuation of any area. Following a declaration of emergency, these authorities are exercised, on behalf of the Governor, by the Secretary of Public Safety, acting as the State Coordinating Officer for emergency and disaster.

The Governor can be expected to assure a very visible role in any site or general radiological emergency. Emergency public information emanating directly from the Governor, or from his office will be more effective, whether it involves advice or instructions to evacuate, take shelter, or carry on with every-day activities.

2. Emergency Operating Centers

State level operations will be coordinated from the State Emergency Operating Center in Framingham. Area operations will be controlled from either MCDA Area II (Bridgewater) or Area IV (Belchertown) Headquarters.

Each of the 30 local communities involved in plume exposure Emergency Planning Zone (EPZ) evacuation or reception activities have designated a local EOC. Depending upon wind direction and other variables, one or more of these EOCs may be designated as near-site EOCs for State/Local/Federal coordination.

3. Mapping

Large-scale high resolution maps (2 inches to the mile) have been developed by MCDA and will be distributed with this Plan. The maps show 16 radial sectors, centered on compass headings, with Sector A centered on a true north heading. Sectors are designated A-R in a clockwise direction, with "I" and "O" omitted. Miles from the plant site are marked in 1-mile increments to five miles, and a ten-mile circle is shown. Massachusetts, Vermont, and New Hampshire will all use this map to coordinate emergency operations.

Attachment A3-1 illustrates the general legend and the specially-highlighted RERP legend.

4. Emergency Planning Zones

Should an accident occur, those persons closest to the facility would be, in general, at greater risk than those persons farther away. Therefore, planning should be directed toward provision of quickest action for those nearest the facility. The current State planning concept recommends two "plume exposure" planning zones; an "inner zone", with a five mile radius, and an "outer zone" with a ten mile radius. A third emergency planning zone, called the "ingestion exposure" zone, extends up to fifty miles from the facility.

(In Massachusetts, all but one of our 351 cities and towns are within 50 miles of an existing or proposed nuclear power station. Consequently, ingestion exposure protective actions beyond the ten mile zone will be carried out by the appropriate State agencies, the Department of Public Health's Food and Drug Division, the Department of Food and Agriculture, and the Department of Environmental Quality Engineering. Protective actions will be carried out by these agencies with the assistance of their local counterparts.)

Figure A3-1, on the following page, illustrates the emergency planning zone concept.

The inner zone (5 mile) is that area where there is a need for the most immediate action. It is also the area where the need for any protective action in this zone could range down to as little as a few minutes to a few hours, although more time would be more likely.

The area from the inner zone to a distance of ten miles from the power station should be the area of next greatest concern. In this "outer plume exposure zone", more time would be available to initiate protective actions because of both a) plume travel time, and b) lower radiation dose levels. (Higher wind speeds

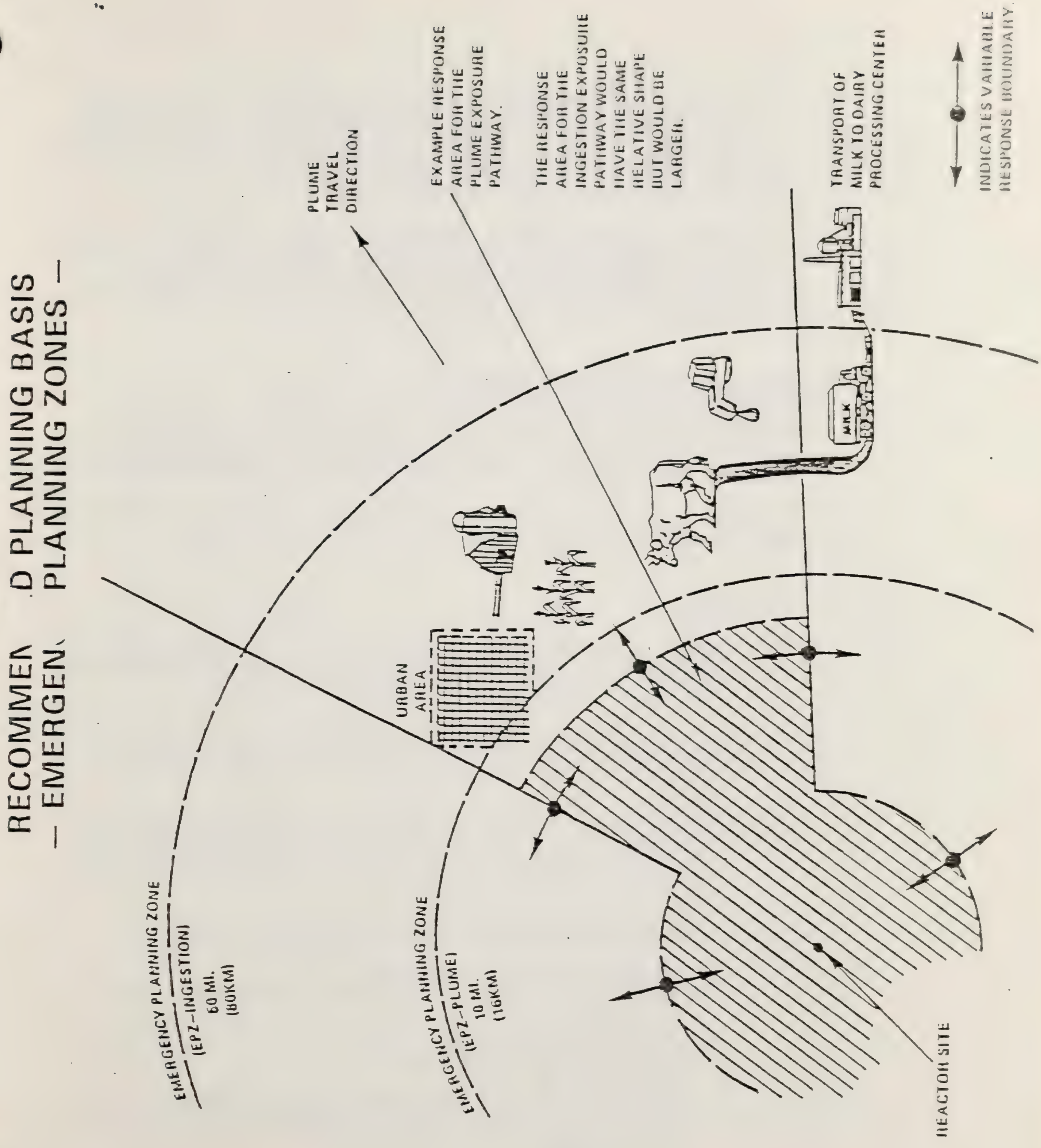

RECOMMEN D PLANNING BASIS
— EMERGEN PLANNING ZONES —
PLUME TRAVEL DIRECTION
EXAMPLE RESPONSE AREA FOR THE PLUME EXPOSURE PATHWAY.
THE RESPONSE AREA FOR THE INGESTION EXPOSURE PATHWAY WOULD HAVE THE SAME RELATIVE SHAPE BUT WOULD BE LARGER.
TRANSPORT OF MILK TO DAIRY PROCESSING CENTER
INDICATES VARIABLE RESPONSE BOUNDARY.
EMERGENCY PLANNING ZONE (EPZ–INGESTION) 50 MI. (80KM)
EMERGENCY PLANNING ZONE (EPZ–PLUME) 10 MI. (16KM)
URBAN AREA
MILK
REACTOR SITE

Figure A.3-1

which would decrease protective action time in terms of plume travel time, would increase protective action time in terms of radiation dose levels through greater dispersion of the plume.) Time available to initiate protective action in this zone would range from a few hours to a few days.

While the likelihood of evacuation in this zone being necessary is far lower than in the inner zone, effective plans to notify and evacuate the population of selected sectors, as well as plans for other protective actions, have been developed. (See Sections C, D and E.)

C. EMERGENCY SUPPORTING ORGANIZATION

Emergency supporting organization provisions are covered under provisions of Part One of the Comprehensive Emergency Response Plan ("Agency Task Assignments" and "Coordination of Emergency Operations").

A matrix of primary and support radiological emergency responsibilities and functions appears as Attachment A3-2 to this Section.

D. PROCEDURES

1. Procedures for EOC staff augmentation will be consistent with those established in the Comprehensive Emergency Response Plan, Part One, Coordination of Emergency Operations.

2. The MCDA Emergency Action Officer notified will be the Incident Operations Director until relieved of that responsibility by the Director or his designee.

3. The Department of Public Health official who receives initial notification from the State Police of an incident will assume the duties of DPH coordinator until the EOC in Framingham is activated and staffed by DPH.

   The initial coordinators responsibilities include:

   a. Communicate with the utility;
   b. Verify the initial call and get an evaluation of the accident;
   c. Dispatch DPH officials to the scene of the accident and to the EOC at Framingham;
   d. Mobilize NIAT; and,
   e. Depending upon initial informa-ion, recommend protective actions directly to local civil defense and to the EOC at Framingham.

4. Upon activation of the Framingham EOC and arrival of the DPH official there, that official will assume the role of DPH

coordinator. The DPH coordinator will coordinate the response of all environmental surveillance agencies; coordinate the provision of logistical support for accident monitoring teams at the utility, evaluate their data and, in concert with DPH officials at the scene of the accident. The DPH coordinator will assist both the MCDA and DPH public information officers.

5. Massachusetts Civil Defense Agency Area procedures will be consistent with general Area standard emergency operating procedures. The Area Emergency Action Officer will act as Area Incident Operations Coordinator until relieved of that duty by the Area Director.

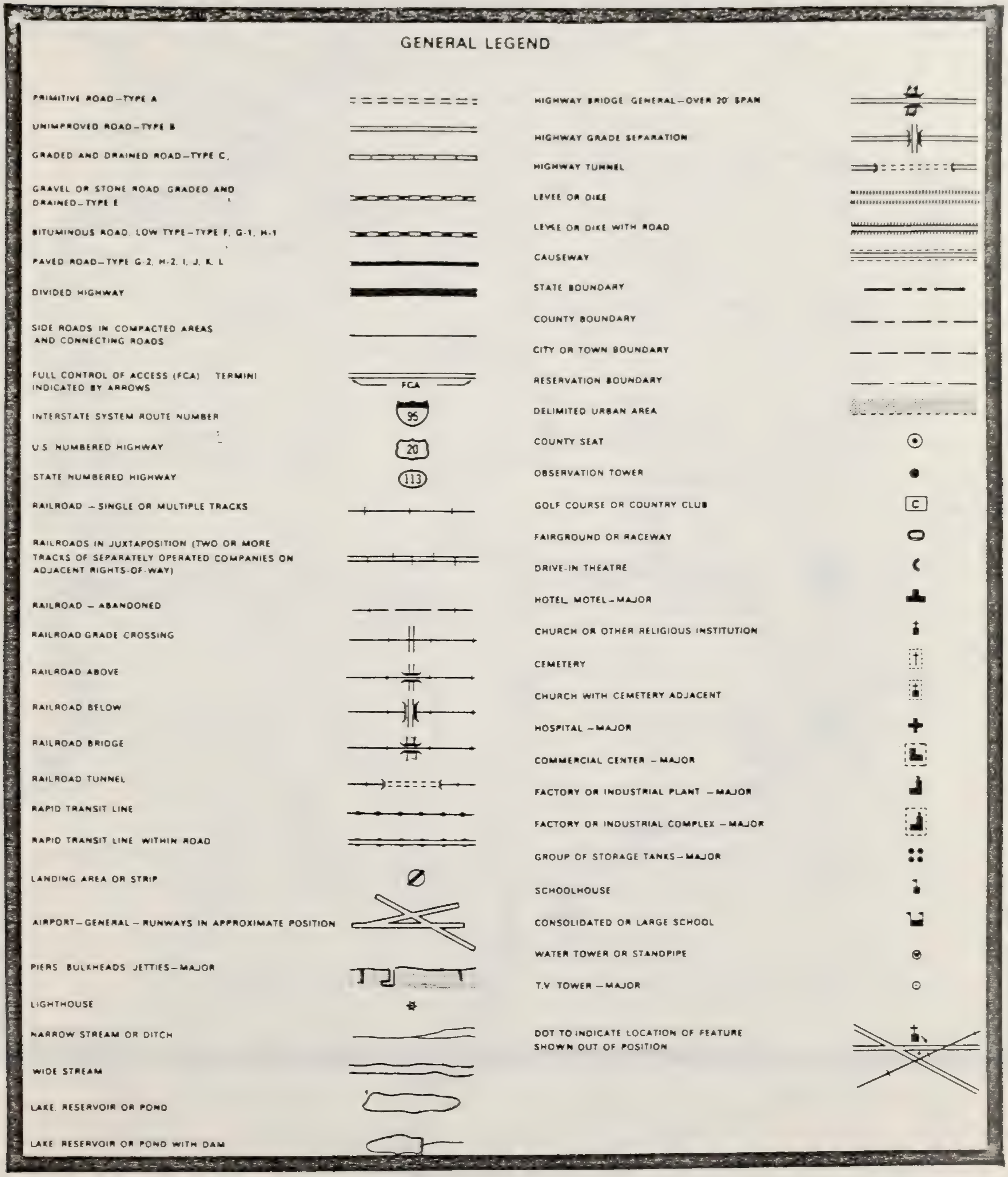
One Sector Director will be dispatched in a radio-equipped vehicle to the utility ECC to back up communications, and to provide logistics and other support to the DPH official there.

RADIOLOGICAL EMERGENCY
RESPONSIBILITIES AND FUNCTIONS

	ACTIONS / AGENCY	Civil Defense	Public Health	Environmental Quality Eng.	Food & Agriculture	State Police	Public Works	Red Cross	Other Voluntary Ag.
GENERAL	Warning/Notification	P				P			
	Communications	P		P		P	P		
	Coordination	P	P						
	Public Information	P	P						
PROTECTIVE	Evacuation	P				S	S		
	Shelter	S						P	S
	Access Control	S				P	S		
	Food, Water, & Milk	S		P	P				
SUPPORTING	Radiation Monitoring	S	P	S					
	Exposure Control	S	P						
	Medical/Health	S	P					S	S
	Public Safety	P				P	S		
	Social Services	S						P	S
	Reentry	S	P			P	S		
	Training/Exercises	P	S			S	S		

K E Y

P = Primary
S = Support

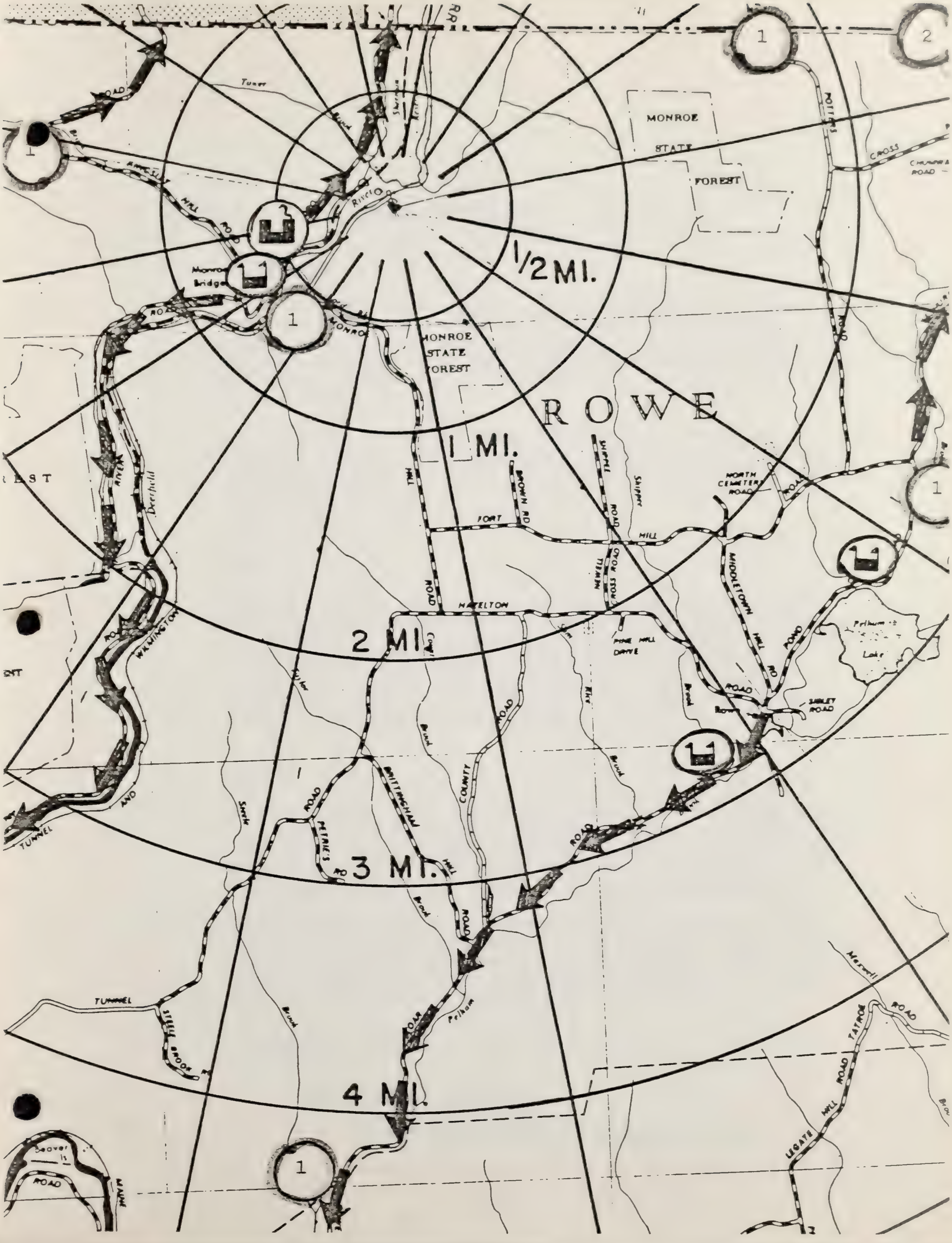


GENERAL LEGEND

PRIMITIVE ROAD—TYPE A
UNIMPROVED ROAD—TYPE B
GRADED AND DRAINED ROAD—TYPE C,
GRAVEL OR STONE ROAD GRADED AND DRAINED—TYPE E
BITUMINOUS ROAD, LOW TYPE—TYPE F, G-1, H-1
PAVED ROAD—TYPE G-2, H-2, I, J, K, L
DIVIDED HIGHWAY
SIDE ROADS IN COMPACTED AREAS AND CONNECTING ROADS
FULL CONTROL OF ACCESS (FCA) TERMINI INDICATED BY ARROWS
FCA
INTERSTATE SYSTEM ROUTE NUMBER
95
U.S. NUMBERED HIGHWAY
20
STATE NUMBERED HIGHWAY
113
RAILROAD — SINGLE OR MULTIPLE TRACKS
RAILROADS IN JUXTAPOSITION (TWO OR MORE TRACKS OF SEPARATELY OPERATED COMPANIES ON ADJACENT RIGHTS-OF-WAY)
RAILROAD — ABANDONED
RAILROAD GRADE CROSSING
RAILROAD ABOVE
RAILROAD BELOW
RAILROAD BRIDGE
RAILROAD TUNNEL
RAPID TRANSIT LINE
RAPID TRANSIT LINE WITHIN ROAD
LANDING AREA OR STRIP
AIRPORT—GENERAL — RUNWAYS IN APPROXIMATE POSITION
PIERS, BULKHEADS, JETTIES—MAJOR
LIGHTHOUSE
NARROW STREAM OR DITCH
WIDE STREAM
LAKE, RESERVOIR OR POND
LAKE, RESERVOIR OR POND WITH DAM
HIGHWAY BRIDGE GENERAL—OVER 20' SPAN
HIGHWAY GRADE SEPARATION
HIGHWAY TUNNEL
LEVEE OR DIKE
LEVEE OR DIKE WITH ROAD
CAUSEWAY
STATE BOUNDARY
COUNTY BOUNDARY
CITY OR TOWN BOUNDARY
RESERVATION BOUNDARY
DELIMITED URBAN AREA
COUNTY SEAT
OBSERVATION TOWER
GOLF COURSE OR COUNTRY CLUB
C
FAIRGROUND OR RACEWAY
DRIVE-IN THEATRE
HOTEL, MOTEL—MAJOR
CHURCH OR OTHER RELIGIOUS INSTITUTION
CEMETERY
CHURCH WITH CEMETERY ADJACENT
HOSPITAL —MAJOR
COMMERCIAL CENTER —MAJOR
FACTORY OR INDUSTRIAL PLANT —MAJOR
FACTORY OR INDUSTRIAL COMPLEX —MAJOR
GROUP OF STORAGE TANKS—MAJOR
SCHOOLHOUSE
CONSOLIDATED OR LARGE SCHOOL
WATER TOWER OR STANDPIPE
T.V. TOWER —MAJOR
DOT TO INDICATE LOCATION OF FEATURE SHOWN OUT OF POSITION

RERP LEGEND

(131)	(blue outline)	Hospital
🏫	(red outline)	School
④	(yellow outline)	Access Control/ Radiation Monitoring
🏭	(green outline)	Commercial Center/ Industrial Complex
⇨	(black)	Evacuation Route
12345	(black)	Sector Population Data
△	(yellow)	Local EOC



1
2
1
MONROE STATE FOREST
CROSS ROAD
1/2 MI.
Monroe Bridge
1
MONROE STATE FOREST
ROWE
1 MI.
NORTH CEMETERY ROAD
FORT
BROWN RD
HILL
1
HAZELTON
2 MI.
PINE HILL DRIVE
MIDDLETOWN HILL RD
POND
Pelham Lake
ROAD
SHIRLEY ROAD
COUNTY ROAD
WHITTINGHAM HILL ROAD
PETRIE'S RD
3 MI.
TUNNEL AND WASHINGTON
TUNNEL
STEELE BROOK RD
Pelham
4 MI.
1
TATRO ROAD
LEGATE HILL ROAD
ROAD
EST

SECTION 4 PUBLIC INFORMATION

A. INTRODUCTION

It is essential that the public, through the news media (press, radio and television) is kept fully informed of any incident at a nuclear power station which could constitute a health hazard beyond the plant boundary. Both Nuclear Regulatory Commission regulations and plant procedures define such conditions, and specify appropriate actions and notifications.

(In situations where an incident's effects are confined wholly within the plant boundary, but some response by public safety or medical units is necessary, the plant public information office is encouraged to promptly inform the news media, and through them the public, that there is no cause for alarm.)

B. SCOPE

Public information activities undertaken during a nuclear power station will, in general, be consistent with the public information respondibilities and procedures set forth in Attachment 1 to Part One of the Massachusetts Comprehensive Emergency Response Plan. This Section identifies specific responsibilities, sets forth specific procedures, and describes material peculiar to radiation emergencies at nuclear power stations.

C. CONCEPTS

The basic concept underlying this Section is that the public must have accurate and authoritative information during a radiation emergency. This need is particularly apparent given the lack of public understanding of the radiation hazard, media uncertainty, and the large number of different sources of available information.

The procedures set forth in this Section are intended to maximize the degree of coordination between and among Federal, State and local officials, and facility operators, so as to reduce the degree of apparent conflict and increase the authoritativeness of both emergency and general public information.

D. PROCEDURES

1. State Information Procedures

a. Coordination with Utility and Local Officials

Whenever possible, MCDA and the Department of Public

Health will coordinate news releases with both the utility and local officials. The purpose of this coordination is to assure accuracy and uniformity of approach in news releases from authoritative sources, thereby avoiding the release of contradictory information which may confuse or alarm the public.

b. Information Sources

Normally, the Governor's Press Secretary will release emergency information on behalf of the Commonwealth. Following activation of the State Emergency Operating Center in Framingham, the Director, MCDA, or his designee may release information directly from Framingham. During localized emergencies, a local site, preferably the local emergency operating center may be designated for coordinated public information activities.

2. Utility Information Procedures

Plant emergency operating procedures require notification and release of appropriate information relative to certain categories of incidents, including all of thise potentially effecting public health. Following the initial release, Company information bulletins will be released as follows:

--When there is any change in the situation which either requires further response, or cancels the alert; or,

--When there is no change, at appropriate intervals.

3. Emergency Broadcast System

Widespread and rapid dissemination of initial warning messages and instructions for the taking of protective actions demands the utilization of the Emergency Broadcast System (EBS). The Massachusetts Civil Defense Agency will utilize EBS to alert the public, and to advise the public of protective actions recommended by DPH. Area and local plans carry a listing of AM and FM stations, and television channels to tune to for this information. Sample messages appear as Attachment A1-1 to this Section.

4. Clear, authoritative and definitive information in advance of a possible emergency is important. MCDA has developed a standard question-and-answer format booklet which will be distributed widely within a radius of ten miles of each nuclear power station.

The four pages comprising the cover of this booklet (front and back, inside and outside) will be tailored to each individual town, and will include an evacuation route map, local radio and television stations, and designated reception areas.

A sample cover, for the Town of North Adams, and a draft of the inside text appears as Attachment A.4-2 to this Section.

SAMPLE MESSAGES

News Release #1

An alert has been declared by Boston Edison Company for its Pilgrim I Nuclear Power Station in Plymouth, Massachusetts. This alert has resulted because of an emergency condition at the plant site. No radiation hazard exists and no danger is expected outside the plant boundary. Stay tuned to this radio/TV station for further information. Do not go to the plant area. Repeat -- DO NOT GO TO THE PLANT -- DO NOT CALL. MORE INFORMATION WILL BE FORTHCOMING. PLEASE STAY TUNED.

News Release #2

An emergency alert has been declared by Boston Edison Company for its Pilgrim I Nuclear Power Station in Plymouth, Massachusetts. There has been a release of radioactive material at the plant site. No danger is expected outside the plant boundary. Do not call or go to the plant area. Local and State public health and civil defense officials will advise if other steps are required. Repeat -- THIS IS AN EMERGENCY ALERT -- STAY TUNED FOR INSTRUCTIONS.

New Release #3

An emergency alert has been declared by Boston Edison Company for its Pilgrim I Nuclear Power Station in Plymouth, Massachusetts. If a public hazard develops, you will be notified via this radio/TV station and/or civil defense officials and/or police and fire personnel. (If you are asked to evacuate, please do so according to instructions. Move with caution and follow directions). Do not call or go to the plant area. Do not evacuate unless ordered. Stay tuned for further information.

SAVE THESE PLANS

Included in this material is a self-adhesive set of brief instructions as shown on the right. Fill in the specific information for your location, peel off the backing and place it on an inside door jamb.

In case of a Nuclear Plant Accident -
if you hear a steady 3 to 5 minute blast on your fire siren, tune your radio to **WMNB**
1230 AM 100.1 FM
for instructions.

SHELTER - if you are told to take shelter, stay indoors, close & seal all doors & windows and go to your cellar if you have one. People without home basements may be further advised to go to- ST. Josephs Bldg Ward 1
N A State College Ward 2

EVACUATION - if you are told to evacuate, go to YMCA-WARD 1
McCANN SCHOOL WARD 2
KEEP YOUR RADIO ON FOR FURTHER INSTRUCTIONS.

For further assistance on more information, call your local Civil Defense Director. If you cannot contact your local office, call the State Civil Defense Office in the area in which you live:

PLYMOUTH COUNTY

Area 2
697-3111

BERKSHIRE COUNTY
FRANKLIN COUNTY

Area 4
323-6306
323-5055

EMERGENCY INFORMATION

for

NORTH ADAMS
MASSACHUSETTS

IN CASE OF AN ACCIDENT
AT A
NUCLEAR POWER PLANT

WHAT TO DO →

WHERE TO GO →

It is possible that an accident at a nuclear power plant could affect the safety of people in the area. This plan includes actions that will protect you and your family.

The information has been prepared by local and state officials using guidelines recommended by the Nuclear Regulatory Commission.

SAVE THESE PLANS

TO PROTECT YOU & YOUR FAMILY

HOW TO KEEP INFORMED

Notification of an Emergency

You will be notified of a nuclear incident emergency by one of several means:

1. Fire or Civil Defense sirens (steady tone).
2. Police and Civil Defense vehicles on a street-to-street basis.
3. Local media (Radio, TV or newspapers).

Regardless of how you have been notified, tune in your local radio station. They will be provided with the latest officials instructions. Stay tuned to

RADIO:

WMNB - 1230 AM 100.1 FM
or TV:

Channel 7 or Channel 19

SPECIAL INSTRUCTIONS

- You may be asked to go to your home basement for a short period of time.
- You may be told that a public fallout shelter is advised for certain blocks or neighborhoods. Please comply. These instructions will also name the public shelters to use.
- In the worst situation, you may be advised to evacuate your home and move to a specific reception center outside of your neighborhood. Street-to-street police and Civil Defense vehicles will be there to assist you. Do not panic! Take your time - secure your home and bring necessary medicines and supplies - follow instructions.
- If you have a specific problem, call your Civil Defense Office at 662-2924, Mrs.

Evacuation Instructions

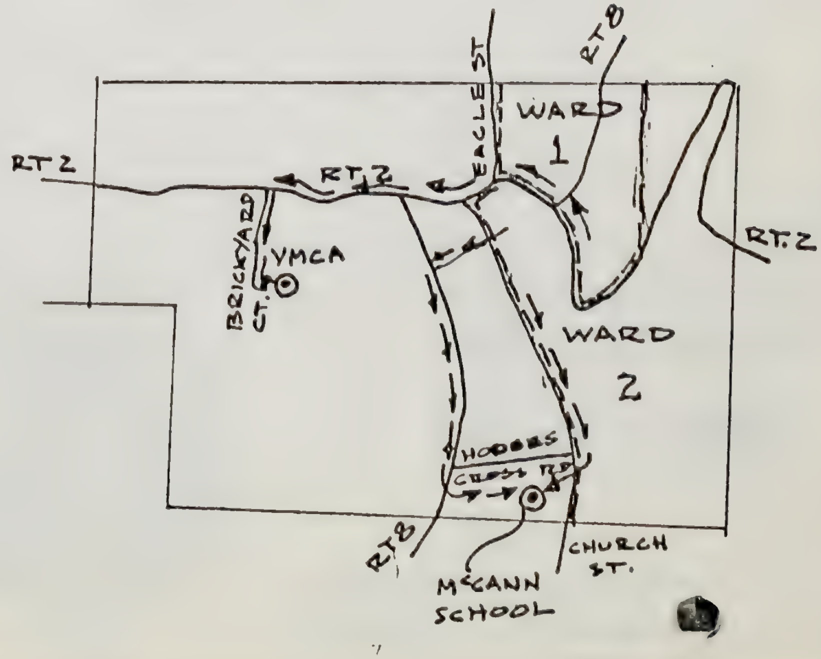
If it becomes necessary to evacuate people in North Adams, only the people on the East Side will be affected. They are closest to the Nuclear Power Plant in Rowe. Others will be given specific instructions for protection.

The following routes and reception centers will be used for the evacuation of the East Side of North Adams:

If you are in Ward 1 (North of Route 2 and East of Eagle St.) go to Route 2 West, turn left on Brickyard Court to the Y.M.C.A.

If you are in Ward 2 (South of Route 2 and East of Church St.) go to the McCann Regional School using Church St. or Route 8 South.

Evacuees will be registered at the Reception Centers and given further instructions.



Draft Inside Text:

QUESTIONS AND ANSWERS

What is a Nuclear Power Plant?

Nuclear power plants produce electricity by the fissioning (or splitting) of uranium atoms. The uranium is inside metal rods about ½ inch in diameter, and about 12 feet long. These rods are formed into fuel bundles of about 50-200 rods each. Each reactor contains several hundred bundles, which are enclosed in a large steel vessel. The vessel is filled with water, which is needed both to cool the fuel and to maintain the fission chain reaction.

The heat released in the uranium by the fission process heats the water and forms steam. The steam turns a turbine which generates electricity. Similarly, coal and oil plants generate electricity using fossil fuel to generate heat.

Modern nuclear power plants are very large. A typical plant has an electrical capacity of 1,000,000 kilowatts, or 1,000 megawatts. This is enough electricity for a city of about five hundred thousand people.

Can a Nuclear Power Plan Explode Like an Atom Bomb?

No. It is impossible for nuclear power plants to explode like a nuclear weapon, because it contains only a small fraction (3-5%) of the special type of uranium (uranium 235) that must be used in weapons.

What Causes the Risks Associated with Nuclear Power Plants?

The risks from nuclear power plants are due to the radioactivity formed by the fission process. In normal operation nuclear power plants release minute amounts of this radioactivity under controlled conditions. In the event of highly unlikely accidents, larger amounts of radioactivity could be released, and could cause significant risks.

How Great are the Risks Associated with Nuclear Power Plants?

A study commissioned by the U.S. Nuclear Regulatory Commission* concluded that the likelihood of death or injury nuclear reactor accidents is much smaller than that of many non-nuclear accidents having similar consequences, including fires, explosions, toxic chemical releases, dam failures, airplane crashes and various natural disasters.

The study states that from the viewpoint of a person living in the general vicinity of a reactor, the likelihood of being killed in any one year in a reactor accident is one chance in 5 billion, and the likelihood of being injured is one chance in 75 million.

By contrast, the likelihood of any one individual being killed in an auto accident is one in 4,000, and of being injured in an auto accident, one in 130.

While the error bounds on such estimates are quite high, and should not be used uncritically, the estimates are useful tools for emergency planning.

*Reactor Safety Study -- An Assessment of Accident Risks in U.S. Commercial Nuclear Power Plants; United States Nuclear Regulatory Commission, October, 1975

How can Radioactivity be Released?

The only way that potentially large amounts of radioactivity could be released is by melting the fuel in the reactor core. The fuel that is removed from a reactor after use and stored at the plant site also contains considerable amounts of radioactivity. However, accidental releases from such used fuel were found to be quite unlikely and small compared to potential releases of radioactivity from the fuel in the reactor core.

The safety design of reactors includes a series of systems to prevent the overheating of fuel and to control potential releases of radioactivity from the fuel. Thus, for a potential accidental release of radioactivity to the environment to occur, there must be a series of sequential failures that would cause the fuel to overheat and release its radioactivity. There would also have to be failures in the systems designed to remove and contain the radioactivity.

How Might a Core Melt Accident Occur?

There are two broad types of situations that might lead to the melting of a reactor core. In the event of loss of normal cooling water from the cooling system, core melting would be prevented by the use of an emergency core cooling system (ECCS). However, if the ECCS were to fail to operate, core melting could occur. This type of accident is called a loss of coolant (LOCA) accident.

The term "transient" refers to any one of a number of conditions which could occur in a plant which would require the reactor to be shut down. Following shutdown, decay heat removal systems would operate to keep the core from overheating. Certain failures in either the shutdown or the decay heat removal systems also have the potential to cause melting of the core.

What Features are Provided in Reactors to Cope with a Core Melt Accident?

Nuclear power plants have many systems designed to prevent core melting. Additional features come into play to remove or contain the radioactivity released from the molten fuel should core melting occur. These features include such things sprays to wash radioactivity from the atmosphere of the essentially leaktight containment building built around the reactor to trap radioactive particles before their release.

Even though the containment building would be expected to remain intact for some time following a core melt, eventually the molten mass would be expected to eat its way through the containment floor into the ground below. Following this, much of the radioactive material would be trapped in the soil, although a small amount would escape to the surface and be released.

It is possible to postulate core melt accidents in which the containment would fail by overpressurization or through missiles created by the accident, resulting in releases of larger amounts of airborne radioactivity. Although such accidents are far less likely than melt-down followed by melt-through, their consequences are greater.

What are the Consequences of Serious Reactor Accidents?

Most serious reactor accidents, including most core melt accidents, would not result in any immediate or short-term injuries or fatalities. Latent cancer fatalities would in most cases be less than one for such an accident.

Far less likely but more serious core melt accidents followed by large scale atmospheric release, a wide range of consequences is possible, depending upon the amount of radioactivity released, the way it is dispersed by the prevailing weather conditions, and the number of people exposed to the radiation. These consequences can include fatalities and injuries in areas close to the plant, and increases in cancers and genetic defects in more remote areas.

How can People be Protected from the Consequences of such Accidents?

The greatest immediate threat to people in the path of a radioactive gaseous plume is from direct exposure or inhalation of radioactive gases or particulates, particularly a form of radioactive iodine. The most effective protective action is to evacuate people in the path of the plume, and to control access to the affected area. Where time does not permit evacuation, or where the magnitude of the expected radioactive release does not warrant it, remaining indoors, preferably in an inner room or basement, will provide a significant degree of protection for up to two hours. Doors and windows should be sealed with tape, and air conditioners and fans turned off.

In some circumstances, a drug in tablet form (potassium iodine) can be used to protect the thyroid gland from absorbing radioactive iodine. In such cases, public health authorities will arrange its distribution to the public.

Cattle feed, freshly harvested vegetables, open water supplies and soil can become contaminated by particulates or by rain passing through a radioactive plume. In this case, fresh vegetables, cattle feed, milk from grazing cattle, and water from exposed reservoirs must be tested for contamination before consumption. Food and water in the home are safe.

How Large an Area is at Risk?

The Federal Nuclear Regulatory Commission and the Environmental Protection Agency recommend an "Emergency Planning Zone" (EPZ) of about 10 miles around each nuclear power station as a "plume exposure" planning zone, and recommend that evacuation plans be developed for that area. The Massachusetts Legislature passed a law in 1979 which mandates that plans for evacuation and other protective actions be developed for all areas within a 10 mile radius of each nuclear power station affecting Massachusetts.

The 10 mile radius was chosen because for most serious reactor accidents, including most core melts, evacuation, shelter or access control would not be recommended beyond ten miles. Contamination of farm produce, dairy feed, and water supplies is possible over greater distances. The Nuclear Regulatory Commission and the Environmental Protection Agency recommend that "ingestion exposure" protective actions, such as removing cattle from pasture, and testing and removing from market contaminated produce and milk could be necessary as far as 50 miles from a nuclear power station.

Massachusetts plans provide for carrying out these "ingestion exposure" protective actions anywhere in the State, depending upon wind direction at the time of a release.

How will I know there has been an Accident, and what Action should I take?

In Massachusetts, each nuclear power station is linked by microwave to the State Police. When notified of an actual or potential emergency, the State Police immediately notify the Massachusetts Department of Public Health, and utilize the National Attack Warning System and Law Enforcement communications networks to alert Civil Defense and local officials. Based on assessments made by Department of Public Health radiation specialists, the Governor or the Commissioner of Public Health will recommend a course of action to local police, fire and other officials. All of this can be done in a very few minutes.

Should evacuation, shelter, or other action be necessary, local police, fire, civil defense and other vehicles will be moving through the community alerting the public with sirens, bells, loudhailers and other devices. Turn on your radio or television to the stations listed on the cover of this booklet.

DO NOT PANIC. FOLLOW INSTRUCTIONS. LISTEN TO EMERGENCY PUBLIC INFORMATION

IF YOU ARE DIRECTED TO TAKE SHELTER:

1. Go indoors and close all doors and windows.
2. Turn off all air conditioners and fans.
3. Remain indoors until notified otherwise.
4. Do not use the telephone except for emergency.
5. Keep your radio or TV on for information.
6. Food and water in your home is safe.
7. Do not eat garden produce after shelter period.

IF YOU ARE DIRECTED TO EVACUATE:

1. Turn off all appliances.
2. Take extra clothing, blankets, personal necessities and pets.
3. Secure your property like you were going on vacation.
4. Keep vehicle windows and vents closed and radio on.
5. Follow the EVACUATION ROUTE MARKERS!
6. Obey speed limits and traffic directions.

SPECIAL ATTENTION FOR FARM FAMILIES

7. Get livestock under cover if possible.
8. Provide stored feed and water.
9. Secure farm buildings.

EMERGENCY ITEMS WHICH SHOULD BE KEPT ON HAND INCLUDE:

1. Flashlight with extra batteries.
2. Portable radio with extra batteries.
3. First aid kit and special medicines.
4. Tools or tool kit.
5. Concentrated foods.

SECTION 5 ACCIDENT ASSESSEMENT

A. INTRODUCTION

Assessment and monitoring the off-site consequences of a radiological emergency is a highly specialized form of emergency intelligence gathering and analysis. While the principles of intelligence gathering set forth in the Massachusetts Comprehensive Emergency Response Plan (CERP -- Part One, Attachment 1) have general applicability, the very specialized nature of radiological emergencies demands highly specialized equipment and procedures.

This section identifies the equipment, systems and procedures to be used by nuclear facility operators and State and local agencies for assessing the consequences of radiological emergencies at nuclear power stations.

B. REFERENCES

1. NIAT Handbook; Massachusetts Department of Public Health, June, 1979.

2. Manual of Protective Action Guides and Protective Actions for Nuclear Incidents; United States Environmental Protection Agency, September, 1975.

3. Workbook of Atmospheric Dispersion Estimates; D. Bruce Turner, Environmental Protection Agency, 1970.

C. RESPONSIBILITIES

1. Facility Operators

Nuclear facility operators have the initial responsibility for accident assessment. This responsibility includes establishment and maintenance of fixed and mobile radiation monitoring and meteorological equipment, and the training of accident assessment teams.

The facility operator will take prompt action necessary to evaluate potential risk to public health and safety both onsite and offsite, and will promptly communicate initial recommendations concerning protective actions to be taken to the Massachusetts Department of Public Health.

2. Massachusetts Department of Public Health

The primary responsibility of the Massachusetts Department of Public Health(DPH) within the context of this plan is to assess the accident from a public health perspective, and to make appropriate recommendations to the Massachusetts Civil Defense Agency(MCDA), and, where warranted, directly to local authorities relative to protective actions to be taken to minimize the public health consequences of that accident.

DPH responsibilities include:

a. Reviewing accident information from the facility; making independent assessments based on source term, meteorological and demographic data, and field measurements to evaluate the hazards of the accident in terms of previously developed protective action guides and protective actions.

b. Coordination of the resources of the State's Nuclear Incident Advisory Team (NIAT), other State agencies, utility personnel and resources, and Federal agency resources to maintain radiation monitoring in the vincinity of the utility until the accident situation is terminated.

c. Establishment of protective action guides and protective actions according to guidance from established State, Federal and international agencies concerned with radiation protection.

3. Massachusetts Civil Defense Agency(MCDA)

MCDA is responsible for support of DPH assessment actions, including provision of communications and logistic support, and assembly and interpretation of local government radiation monitoring data.

4. Federal Agencies

a. Nuclear Regulatory Commission(NRC)

The NRC representative at the utility Emergency Coordinating Center will act as liaison between DPH and the NRC. He or she will provide information concerning the condition of the plant to the DPH person at the ECC. Prior to the arrival of the NRC representative at the ECC, the NRC will assure telephone communications between the NRC and DPH.

b. National Weather Service

The National Weather Service has agreed to provide the State with current and projected meteorological data available through the NWS Bureau at Logan airport, other NWS stations, and the NWS system of local observers.

c. Department of Energy

Upon request, the Department of Energy will dispatch an IRAP team from its Brookhaven, New York facility to aid in accident assessment (See Section B-7, "Federal Radiological Assistance").

D. CATEGORIZATION OF POTENTIAL ACCIDENTS

Yankee Rowe, Vermont Yankee and Pilgrim Nuclear Power Stations have each provided facility emergency plans to both the Massachusetts Department of Public Health and the Massachusetts Civil Defense Agency. These plans each include a categorization of potential accidents, and are each incorporated herein by reference. Attachment A.5-1, "Postulated Events and Indicating Instrumentation," extracted from the Pilgrim Station emergency plan, is an example.

E. METEOROLOGY

Meteorological conditions, particularly wind speed and degree of turbulance, will be the variable which, when combined with the magnitude of the radiation source term will have the greatest impact on off-site exposure rates. Estimating these exposure rates and deriving dose projections against which to apply protective action guides, demands a capability to apply observed and forecast wind speed, wind direction temperature inversion lid characteristics, and Pasquill turbulance characteristics to a generalized model of the topography of the facility site.

1. Site Meteorological Characteristics

a. Vermont Yankee

The Vermont Yankee Nuclear Power Station is located in the town of Vernon, Vermont, on the West bank of the Connecticut River. Weather patterns tend to develop up and down the river valley, but because the valley is wide a general Gaussian plume dispersion model is appropriate, as opposed to a confined valley model.

Transparent overlaps of $\frac{\bar{u}X}{Q}$ values have been computed for three stability categories: Unstable (Pasquill A, B, C -- good diffusion); Neutral (Pasquill D); and Stable (Pasquill E, F, G -- poor diffusion). The utility has supplied the Department of Public Health, with these overlays together with topographical maps for their application.

b. Pilgrim

The Pilgrim Nuclear Power Station is located on the shores of Cape Cod Bay, in Plymouth, Massachusetts. The site exhibits typical diurnal wind patterns (day time sea breezes, night time land breezes) but the relatively flat terrain makes a generalized Gaussian plume dispersion model appropriate.

As in the case of Vermont Yankee, isopleths have been developed for major Pasquill categories, and provided to the Massachusetts Department of Public Health.

c. Yankee Rowe

General: Yankee Rowe Atomic Power Station is located at the bottom of a deep valley of the Deerfield River in a hilly, densely wooded region of northwestern Massachusetts. At the site, the elevation is approximately 1150 feet above sea level. Within a horizontal distrance of one mile the hills on both sides of the valley rise to approximately 2000 feet above sea level. This steep-slope character of the river extends from Wilmington, Vermont, 12 miles north, to Charlemont, Massachusetts, 8 miles south-southeast of the site. The elevation of the valley walls generally decreases to the south. The mean valley width at 1150 feet elevation is 350 meters.

Pasquill Categories: The annual occurences of various Pasquill categories at the Yankee Rowe site are given by Table A.5-1:

TABLE A.5-1

Frequency of Pasquill Category Occurence in Percent per Annum (YNPS FSAR)

	Frequency of Occurence (annual percent)	
Pasquill Category	ΔT Model	σ_θ Model
A	3.08	55.5
B	1.97	14.3
C	3.23	14.5
D	45.9	11.1
E	34.1	2.90
F	9.66	0.74
G	2.04	0.99

The meteorological characteristics of the valley are marked by a high variability of wind direction with a low frequency of stable conditions occurring simultaneously in the vertical and horizontal planes. Wind direction is generally up or down the valley at an average speed of 3.5 mph.

Dilution Factors: Due to the severe topography and resulting meteorological conditions of the Yankee Rowe site, the Gaussian plume model should only be applied for distances of less than 1 mile and for periods of less than 2 hours. At these limits cross valley plume concentrations are assumed to be uniform.

Exclusion Radius Dilution Factors: Dilution factors for the Exclusion Radius for duration of 1 and 2 hours are given in Table A.5-2. (These figures reflect the building wake effect.)

TABLE A.5-2

Exclusion Area Dilution Factors (from FSAR)

	Dilution Factor (sec/m^3)		
Time Interval	Maximum	95% occurence	50% occurence
0 - 1 hr	3.02×10^{-3}	5.21×10^{-4}	4.88×10^{-5}
0 - 2 hrs	2.33×10^{-3}	3.29×10^{-4}	3.10×10^{-5}

LPZ Dilution Factors: Under the influence of the dominant meteorological conditions effluents may be confined to the valley for downwind distance of up to six miles. During neutral atmospheric conditions conditions plume confinement in the valley can be expected for 2.3 miles. In order to excape confinement in the valley, the plume would have to rise at least 500 feet. The atmospheric conditions which would allow such didpersion occur at an annual frequency of only 8.2%.

Table A.5-3 gives X/Q values based on meteorological measurements for various time intervals at the northern and southern boundaries of the LPZ.

TABLE A.5-3

X/Q Values for North and South Boundaries of the LPZ

	X/Q (at 2 miles) N. boundary LPZ(sec/m^3)		
Time Interval	Maximum	95% Occurence	50% Occurence
0 - 8 hrs	9.43×10^{-5}	2.47×10^{-5}	2.90×10^{-6}
8 - 24 hrs	4.80×10^{-5}	2.02×10^{-5}	3.81×10^{-6}
1 - 4 days	2.32×10^{-5}	1.43×10^{-5}	5.29×10^{-6}
4 - 30 days	1.15×10^{-5}	1.02×10^{-5}	6.05×10^{-6}

	X/Q (at 6 miles) S. end LPZ (sec/m^3)		
Time Interval	Maximum	95% Occurence	50% Occurence
0 - 8 hrs	1.00×10^{-4}	2.46×10^{-5}	2.12×10^{-6}
8 - 24 hrs	5.74×10^{-5}	2.14×10^{-5}	3.10×10^{-6}
1 - 4 days	2.95×10^{-5}	1.78×10^{-5}	3.96×10^{-6}
4 - 30 days	1.50×10^{-5}	1.35×10^{-5}	4.97×10^{-6}

2. Data Sources

The best source of micrometeorological data is the facility, which maintains both high and low level meteorological towers, and can supply upper and lower wind speed and direction, turbulance category (based on sigma-theta calculation) and upper and lower temperatures and differential.

Macrometeorological information will be requested by the Department of Public Health via a call to the Chief Forecaster, National Weather Service, Logan International Airport, Boston, on an unlisted line (unlisted number also available to Massachusetts Civil Defense Agency).

Additional meteorological services can be requested from Weather Services Corporation in Bedford, or from the Environmental Research and Technology Corporation in Concord, both of which have agreed to supply such services in an emergency, or from military sources.

F. REACTOR SYSTEM STATUS

The best method available to DPH to use for early determination of the need for protective actions immediately following an incident and prior to the start of the release is for the facility operator to estimate the potential off-site dose based on information in the control room using relationships developed during the planning stage that relate abnormal plant conditions and meteorological conditions to potential off-site doses. The plant will make this information available to DPH during the verification telephone call.

Based upon reported release rates or potential release rates estimated as a function of reactor system status, DPH will estimate exposure rate patterns utilizing either isopleths or basing its estimates upon the graphs in Attachment A.5-2, "Atmospheric Dispersion Estimates."

The general procedure for developing these estimates will be as follows:

1. Determine the appropriate diffusion model:
    - a. Ground source;
    - b. Elevated source;
    - c. Fumigation;
    - d. Confined Valley.
2. Determine Pasquill Type:
    - a. Standard weather observation,
    - b. Vertical temperature profile.
3. Define parameters:
    - a. Wind speed (v) (meters/sec.)
    - b. Source term (Q) (amount/sec.)
    - c. Source height (h) (meters)
    - d. Downwind distance (x) (meters)
    - e. Valley cross-section (wh) (meters squared).

4. Solve appropriate diffusion equation for concentration.

G. DOSE PROJECTION

Having established exposure rate patterns and having estimated, based upon reactor status, the time period of exposure, the next step is to estimate projected whole body and thyroid dose to members of the general public so that projected dose can be compared with appropriate Protective Action Guides(PAGs).

Attachment A.5-3 is a set of nonograms useful for dose projection estimates.

1. Estimates Based on Source Term

Figure 5.3 provides the atmospheric dilution factor, $X\bar{U}/Q$, as a function of downwind distance and for different atmospheric stability classes. This factor is the concentration (X) in Ci/m^3 that would exist for an average windspeed ($\bar{U}$) of 1 m/sec (1 m/sec = 2 mph) and for a release rate (Q) of 1 curie/sec. To find the downwind concentration (X) for a specific windspeed and release rate, divide the value of $X\bar{U}/Q$ by the windspeed in m/sec and multiply by the release rate in Ci/sec.

To find the projected thyroid dose associated with a particular concentraion, find the point corresponding to the concentration and the estimated duration of exposure on the nonogram in Figure 5.2. Interpolate logarithmically between the dose lines as necessary.

If the release is expressed in total curies as opposed to Ci/sec, any release period can be assumed for purposed of using Figure 5.2 to estimate the projected dose. Assuming a release period of 1 hour, the total release in curies can be converted to release rate in Ci/sec by dividing by 3600 sec/hr.

A more common problem may be to determine the downwind distance at which a particular dose would occur. The following steps would be appropriate for solving this problem:

a. From Figure 5.2 determine the iodine concentration in Ci/m^3 that would cause the thyroid dose of concern for the estimated duration of the exposure.

b. Multiply this concentration "X" by the windspeed "$\bar{U}$" in m/sec and divide by the release rate "Q" in Ci/sec. This provides a dilution factor, $X\bar{U}/Q(m^{-2})$, which can be applied in Figure 5.3.

c. Using Figure 5.3, follow the value for $X\bar{U}/Q$ across to the existing stability class and follow this point down to find the corresponding distance. This is the downwind distance where the dose of concern should occur at the plume centerline.

2. Estimates Based on Environmental Measurements

a. Whole Body Gamma Dose Projection

The projected whole body gamma dose can be estimated by multiplying the gamma exposure rate at a particular location by the time period of exposure. The dose conversion factor is assumed to be 1. Figure 5.1 provides this multiplication.

Figure 5.1 also provides a relationship between exposure rate in mR/hr and the noble gas concentration based on the mixture of radioactive noble gases that would be expected to exist about 4.5 hours after shutdown. If the noble gases have decayed for a longer time these curves would significantly overestimate the projected dose as determined from concentrations and exposure time.

b. Radioiodine Concentration Based on Gamma Exposure Rate Measurements

If no air sample measurements are available, it is possible to obtain a crude estimate of radioiodine air concentrations from gamma exposure rate measurements. This would be the last choice of methods for estimating airborne iodine concentrations.

The left ordinate in Figure 5.2 provides a relationship between the gamma exposure rate from airborne radioactive noble gases plus iodines and the radioiodine concentration (right ordinate) that would contribute to this dose.

The use of Figure 5.2 to estimate thyroid inhalation dose solely on the basis of gamma exposure rates without confirmatory concentration measurements or without correct factors would generally result in projected thyroid doses higher than those that would actually occur. These measurements should be made within 1-2 hours after reactor shutdown.

Caution should be exercised in this method of estimating thyroid dose to avoid projecting thyroid inhalation doses on the basis of gamma exposure coming entirely from deposited material after the plume has passed. For this situation, the gamma exposure rate would increase as the detector approached the ground.

c. Thyroid Dose Projection Based on Air Sampling

Thyroid dose commitment from inhalation is primarily a function of the concentrations of radioactive iodines in the air integrated over the duration of exposure.

Air samples would provide the best source of concentration data for use in Figure 5.2. However, with present day equipment, field measurements of environmental radioiodine concentrations are difficult and too time concuming for quick decision on implementation of protective actions. In the absence of measured iodine concentrations in air, one may calculate the concentrations based on release rates and meteorological conditions or based on gamma exposure rate measurements in the environment.

If environmental concentrations of radioiodines are determined from air samples at selected locations, it would be useful to obtain simultaneous average gamma exposure rate measurements at the same locations. The ratio of gamma exposure rate to iodine concentration should be approximately constant for different locations if the measurements are not spread out over more than about 2 hours. The process of collecting and analyzing a few air samples and estimating concentrations based on gamma exposure rate measurements at other loactions could save considerable monitoring time.

Figure 5.2 provides a family of curves for projected thyroid dose as a function of airborne concentration and duration of exposure.

The basic data, concentration of iodines in the air, and duration of exposure may be measured either as gross iodine or as specific isotopes.

To estimate projected thyroid dose for a particular site, plot the point on Figure 5.2 corresponding to the radioiodine concentration in Ci/m^3 and the expected period of exposure. Using a logarithmic interpolation, estimate the projected thyroid dose values on the curves below and above the point. For example, if the iodine concentration is 10^{-5} Ci/m^3 and is expected to last 2 hours, then the projected adult thyroid dose would be approximately 6 rem, and the child thyroid dose would be approximately 12 rem. Note that the child thyroid dose is two times the adult thyroid dose. The child dose would apply to general populations, while the adult dose would apply to emergency teams or to other adults.

SAMPLE PROBLEM #1

Assume an accident involves a puff release of 20,000 curies of iodines. The release occurs at 2 hours after reactor shutdown, the windspeed is 8 mph - 4 m/sec, and the atmospheric stability class is D. Determine the downwind distance at which the projected dose would be 5 rem to the child thyroid.

SOLUTION:

Since no duration of exposure was given, one can assume 1 hour - 3600 seconds for purposed of calculations.

From Figure 5.2 note that the concentration, X, corresponding to a 5 rem dose to the child thyroid from a 1 hour exposure would be about 8×10^{-6} Ci/m^3.

The release rate, Q, can be assumed to be:

$$\frac{20{,}000 \text{ curies}}{3{,}600 \text{ seconds}} = 5.5 \text{ Ci/sec}$$

Therefore:

$$\frac{X\bar{U}}{Q} = \frac{8 \times 10^{-6} \text{Ci/m}^3 \times 4\text{m/sec}}{5.5 \text{ Ci/sec}} = 5.8 \times 10^{-6} \text{m}^{-2}$$

From Figure 5.3 the distance corresponding to a dilution factor of $5.8 \times 10^{-6} m^{-2}$ under stability class D is about 8 Km or 5 miles.

SAMPLE PROBLEM #2

No iodine concentration measurements have been made, but gamma exposure rate measurements indicate maximum levels of 10 mR/hour at 2 miles downwind. The stability class is D and the nuclear utility reports the iodine to noble gas ratio in the release is 1.0. What is the projected child thyroid dose for a 2 hour exposure?

SOLUTION:

Referring to Figure 5.2 the projected dose without correction factors for 10 mR/hour and 2 hours is about 8 rem to the child thyroid. From Figure 5.5 the correction factor for D stability and 2 miles = 1.6. From Figure 5.4 the correction factor for iodine to noble gas of 0.1 = 0.45.

10 mR/hour x 1.6 x .45 = 7.2 mR/hour. Referring to Figure 5.2, the corrected thyroid dose is projected to be slightly more than 5 rem for a 2 hour exposure.

H. APPLICATION OF PROTECTIVE ACTION GUIDES

Based upon consideration of source term, exposure pathways, population at risk und radiation effects, DPH will recommend to MCDA (or, in some circumstance directly to local authorities) that one or more of the protective actives listed in Section B-1 or B-2 of this plan be implemented. Such recommendations will take into account response times, social and economic costs, attendant risks of the protective action, and other variables.

General assessment and response proceudres for Nuclear Incident Advisory Teams (NIAT) appear as Attachment A.5-4 to this Section.

TABLE N.4.1

Postulated Events and Indicating Instrumentation

Event	Instrumentation
Personnel Emergency	
1. Personal injuries with or without contamination	Radiation monitoring and survey equipment
2. Overexposures	"
3. Contamination	"
4. Ingestion/Inhalation	Whole body counters
Emergency Alerts	
1. Earthquake	--
2. High winds	Meteorological instrumentation
3. Bomb threats/ Civil Disturbances	--
4. Forest fires or other major fire in plant vicinity	--
Plant Emergencies	
1. Fire within the process buildings	Station Fire Alarm System annunciation
2. Inability to shutdown with control rods	Control rod position indicator; rod inserted lamps; rod drift alarm.
3. Loss of all service water	RBCCW and TBCCW temperature indicators; service water system pressure and flow indication; annunciators.
4. Loss of all Reactor Building Cooling Water	Temperature indicators in components cooled by RBCCW; RBCCW system pressure; annunciators.
5. Loss of AC Power	Loss of Control Room AC powered lights; annunciators.
6. Loss of Essential DC Power	Indicating lights on equipment buses; loss of Control Power; CSCS logic power failure and CSCS pump breaker alarms for buses D-4 and D-5; loss of DC annunciators alarm and trip of Reactor Recirculation Pumps for bus D-6.

Event	Instrumentation
7. Loss of Instrument Air	Low pressure and low-low pressure alarms; feedwater control valve lockup; secondary containment isolation; RBCCW and TBCCW surge tank high level; ventilation systems trouble; control rod insertion; reactor water clean-up system flow; RBCCW and TBCCW systems temperature, annunciators.
8. Loss of Feedwater	Reactor vessel low level alarm; probable reactor scram on low water level; recirculation pump runback; condensate pump discharge low pressure alarm; RFP low NPSH alarm; RFP trip alarm.
9. Loss of Fuel Pool Cooling System Coolant	Low water level alarm; area radiation monitoring system.
Site Emergencies	
1. Pipe Break Outside Containment (Steam Line Break Accident)	RPS System annunciator; Steam line high flow; high temperature isolation area Radiation Monitoring System Annunciation; Ventilation Radiation Monitoring System annunciator; Main Steam line radiation monitors; Reactor vessel water level.
2. Refueling Accident	Area Radiation Monitoring System; Ventilation Radiation Monitoring System Annunciator; Refueling Ventilation Exhause Monitoring System Annunciator; Portable radiation monitoring instrumentation.
3. Control Rod Drop Accident	RPS System Annunciation, APRM System Annunciation, Main Steam Line High Radiation Annunciation, Area Radiation Monitoring System; Ventilation Radiation Monitoring System Annunciation.
4. Pipe Breaks Inside the Primary Containment (LOCA)	RPS System Annunciation, Drywell Pressure High Annunciation; probable scram on High Drywell Pressure; Reactor Water Level Low Annunciation; Reactor Bldg. Exhaust Radiation Monitoring System.
General Emergency	Emergency Assessment Instrumentation Section N.7.3

Table A.1—RELATION OF PASQUILL TURBULENCE TYPES TO WEATHER CONDITIONS

A—Extremely unstable conditions
B—Moderately unstable conditions
C—Slightly unstable conditions
D—Neutral conditions*
E—Slightly stable conditions
F—Moderately stable conditions

Surface wind speed, m/sec	Daytime insolation			Nighttime conditions	
	Strong	Moderate	Slight	Thin overcast or $\geq 4/8$ cloudiness†	$\leq 3/8$ cloudiness
<2	A	A–B	B		
2	A–B	B	C	E	F
4	B	B–C	C	D	E
6	C	C–D	D	D	D
>6	C	D	D	D	D

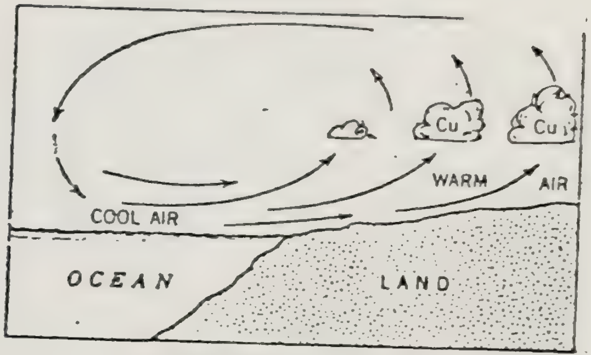
*Applicable to heavy overcast, day or night.

†The degree of cloudiness is defined as that fraction of the sky above the local apparent horizon that is covered by clouds.

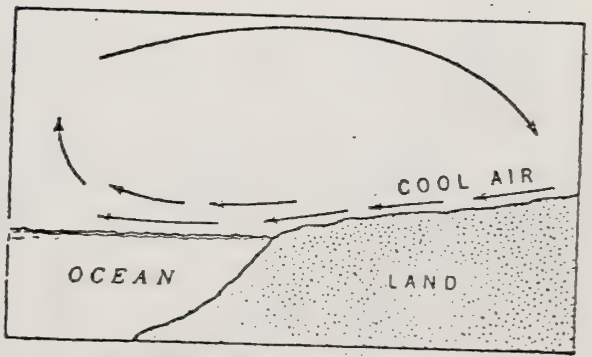
TABLE 2

Classification of Atmospheric Stability

Stability Classification	Pasquill Categories	σ_θ* (degrees)	Temperature change with height (°C/100m)
Extremely unstable	A	25.0°	<-1.9
Moderately unstable	B	20.0°	-1.9 to -1.7
Slightly unstable	C	15.0°	-1.7 to -1.5
Neutral	D	10.0°	-1.5 to -0.5
Slightly stable	E	5.0°	-0.5 to 1.5
Moderately stable	F	2.5°	1.5 to 4.0
Extremely stable	G	1.7°	>4.0

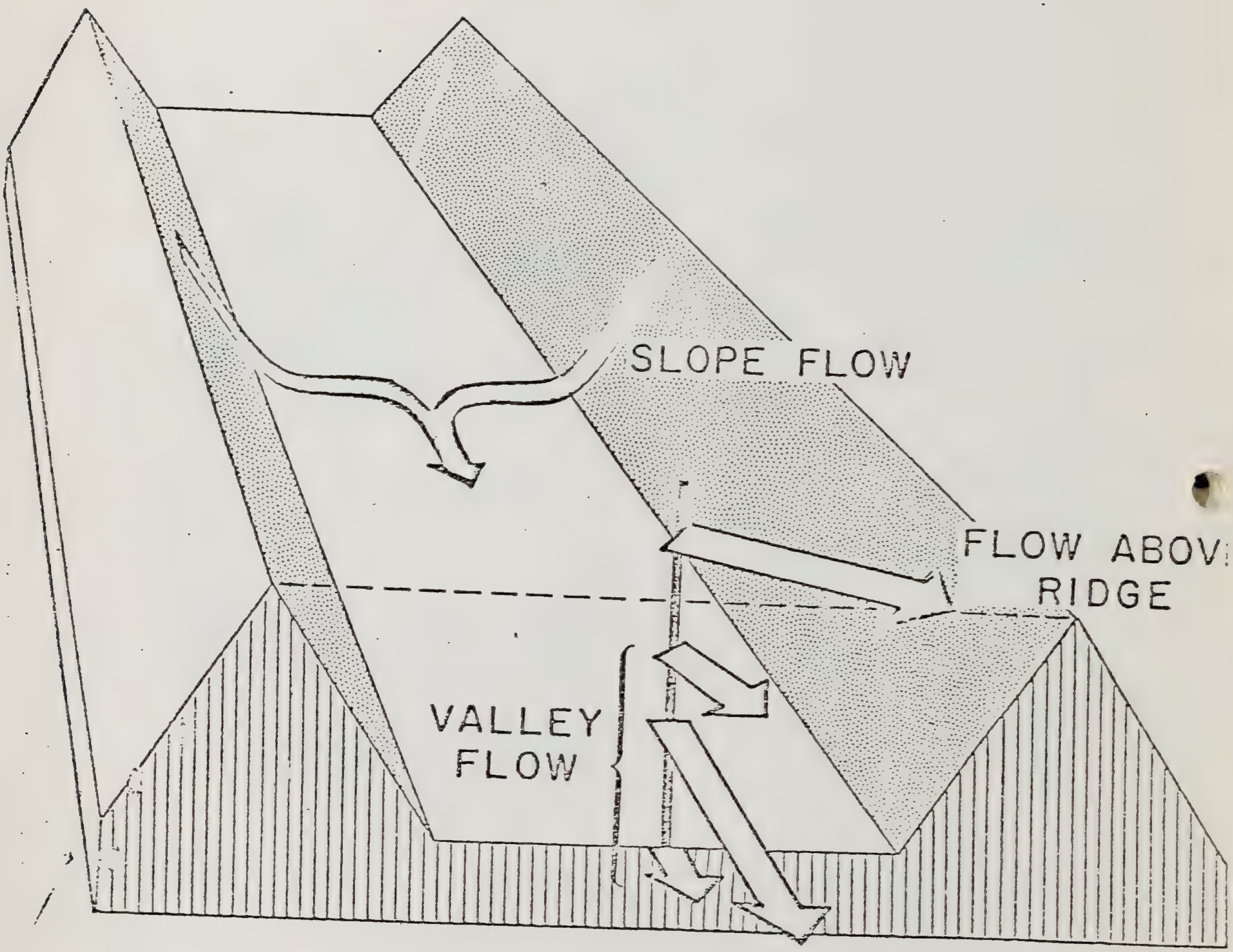


(a) DAY TIME SEA BREEZE



(b) NIGHT TIME LAND BREEZE

Fig. 2.51. Illustrating a type of diurnal wind.


SLOPE FLOW
FLOW ABOV
RIDGE
VALLEY
FLOW

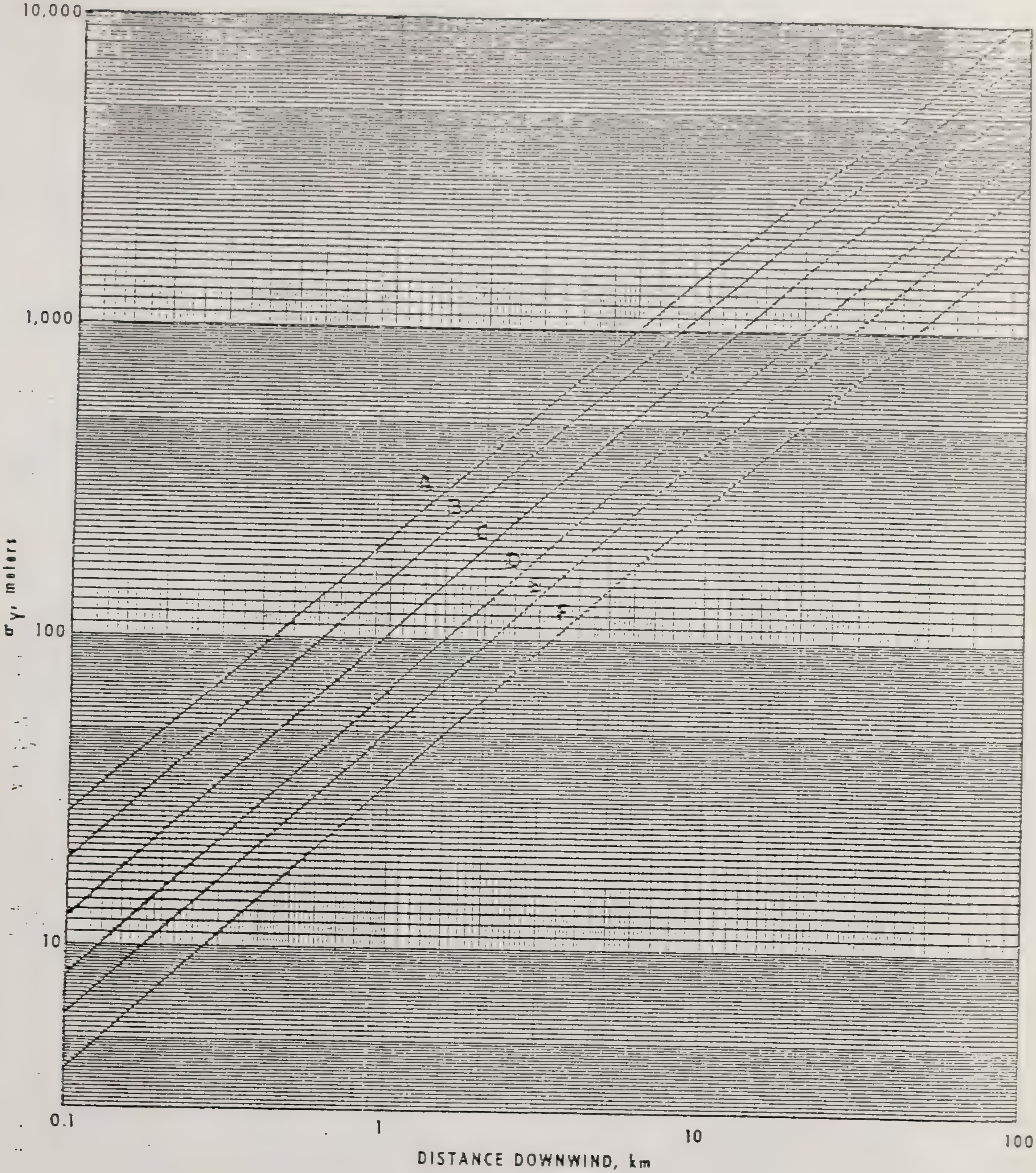


Figure 3-2. Horizontal dispersion coefficient as a function of downwind distance from the source.

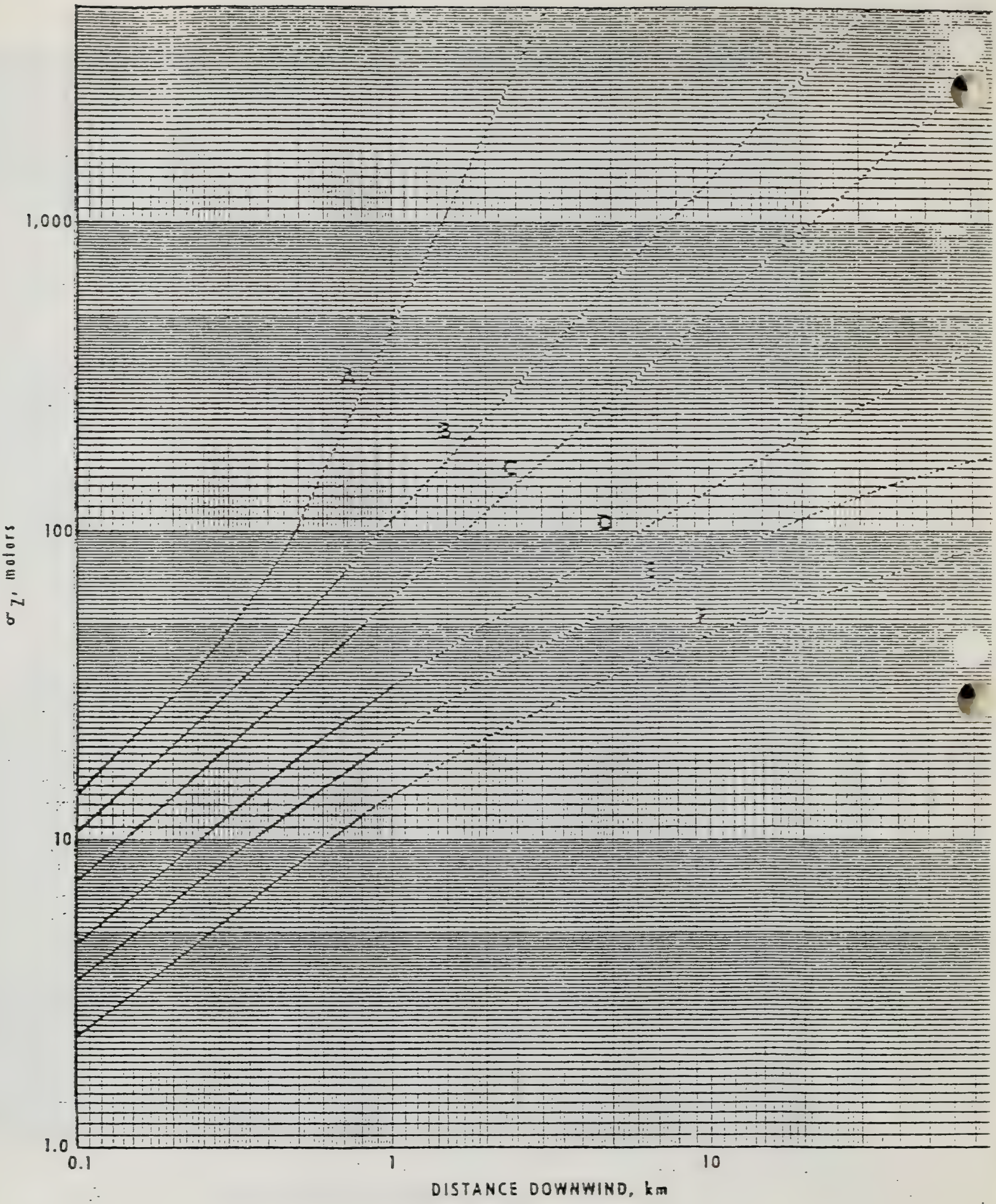


Figure 3-3. Vertical dispersion coefficient as a function of downwind distance from the source.

- Estimates

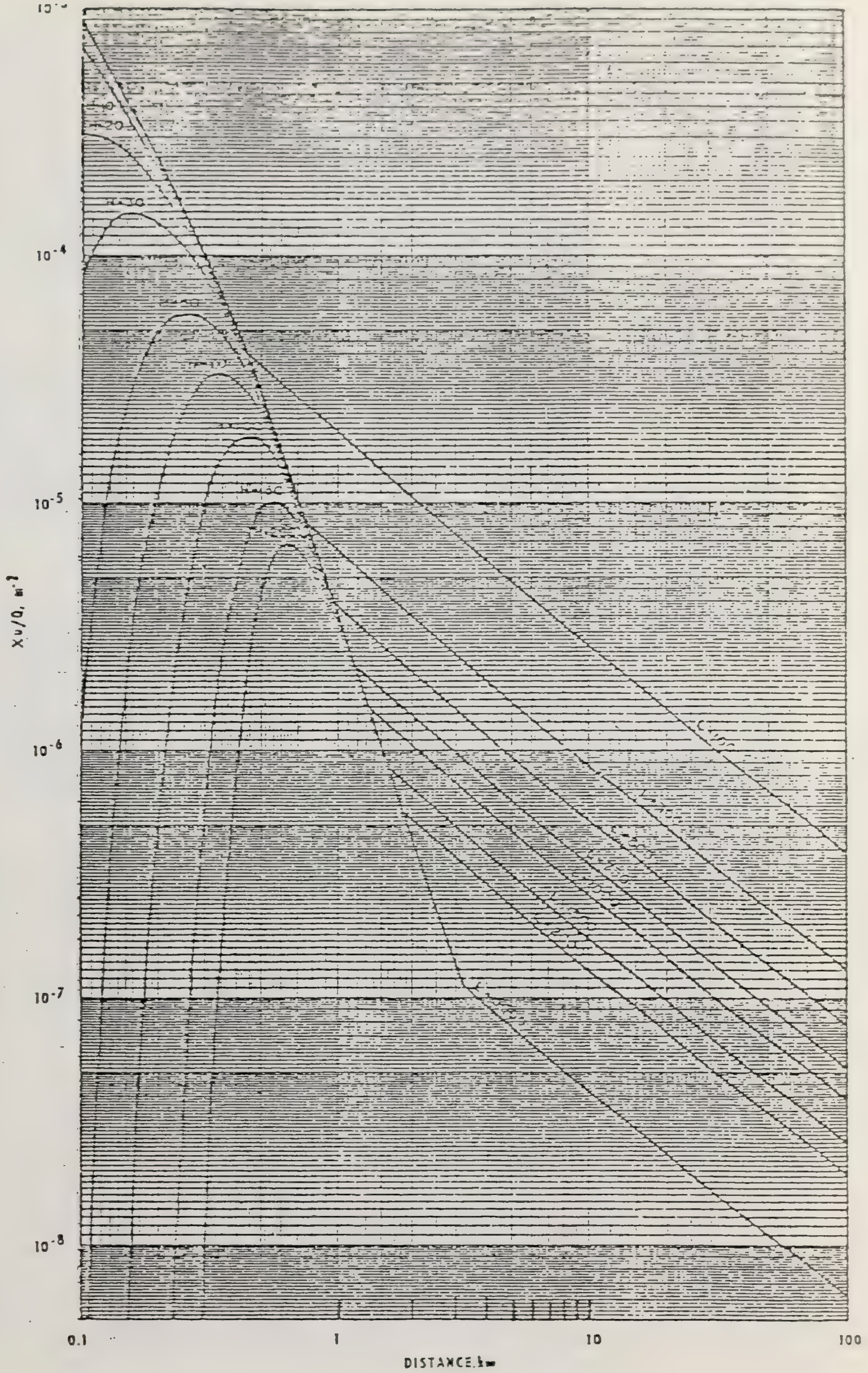


Figure 3-5A. χu/Q with distance for various heights of emission (H) and limits to vertical dispersion (L), A sta

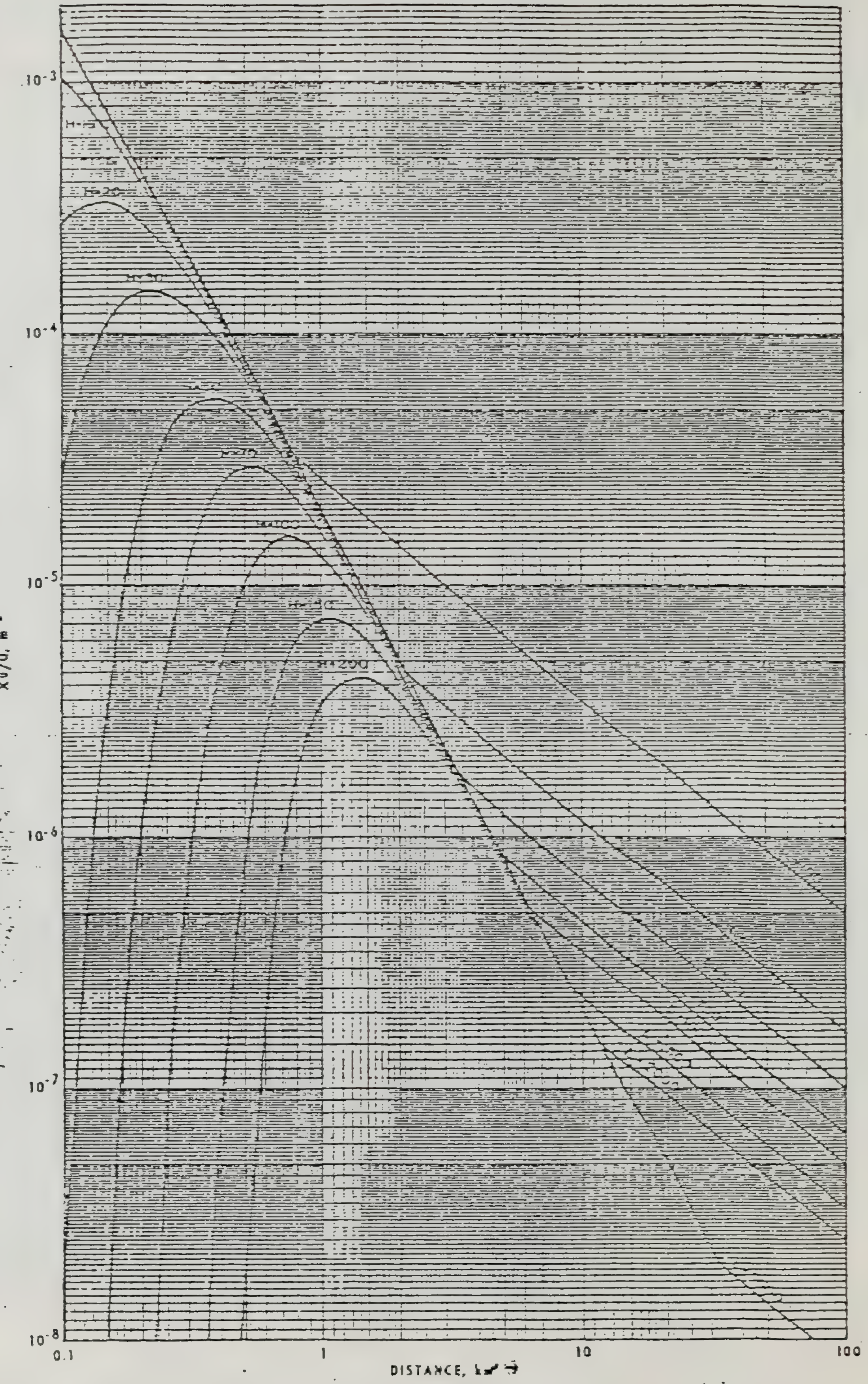


Figure 3-5B. χu/Q with distance for various heights of emission (H) and limits to vertical dispersion (L), B stabil

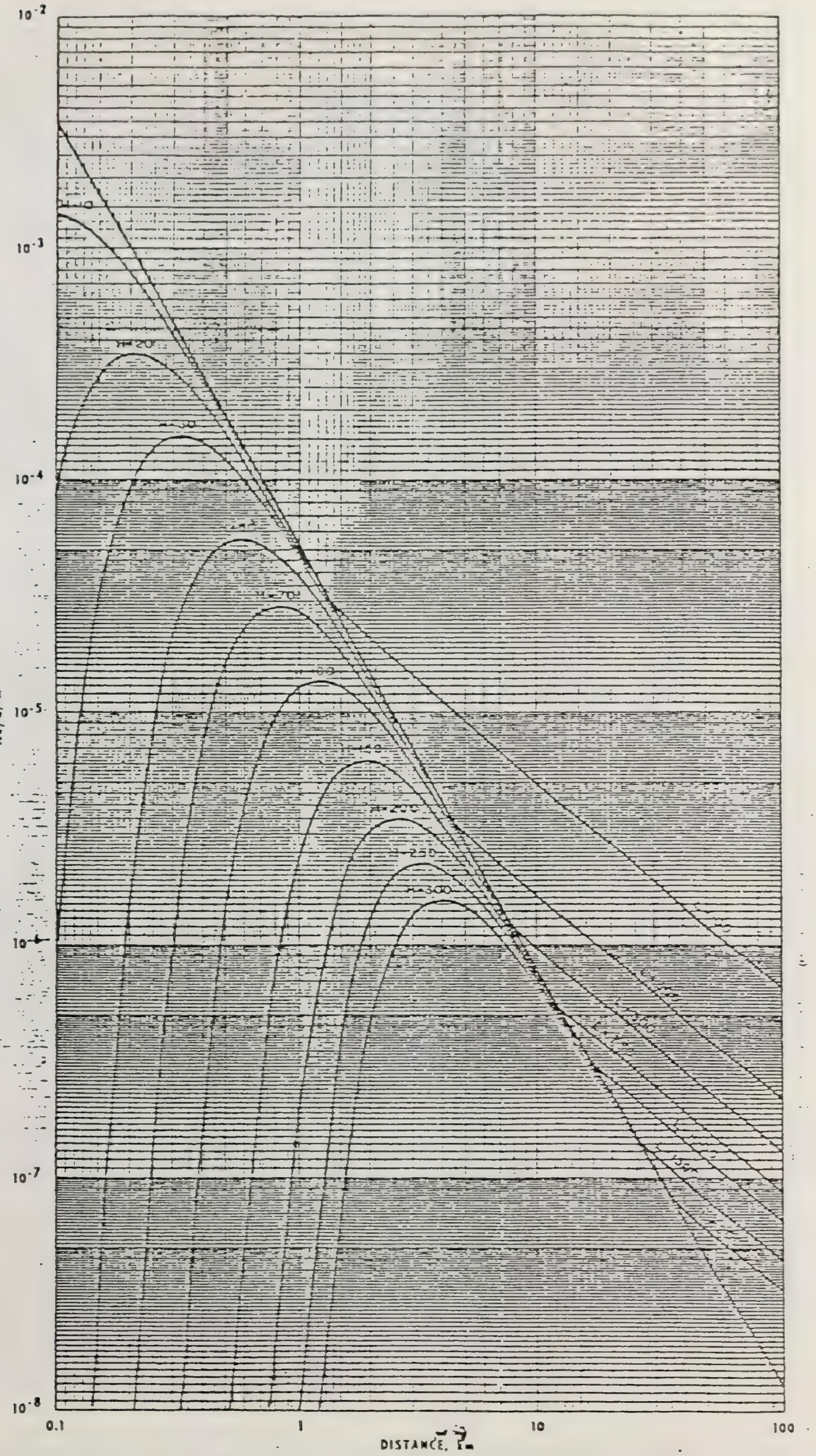


Figure 3-5C. xu/Q with distance for various heights of emission (H) and limits to vertical dispersion (L), C stab

Estimates

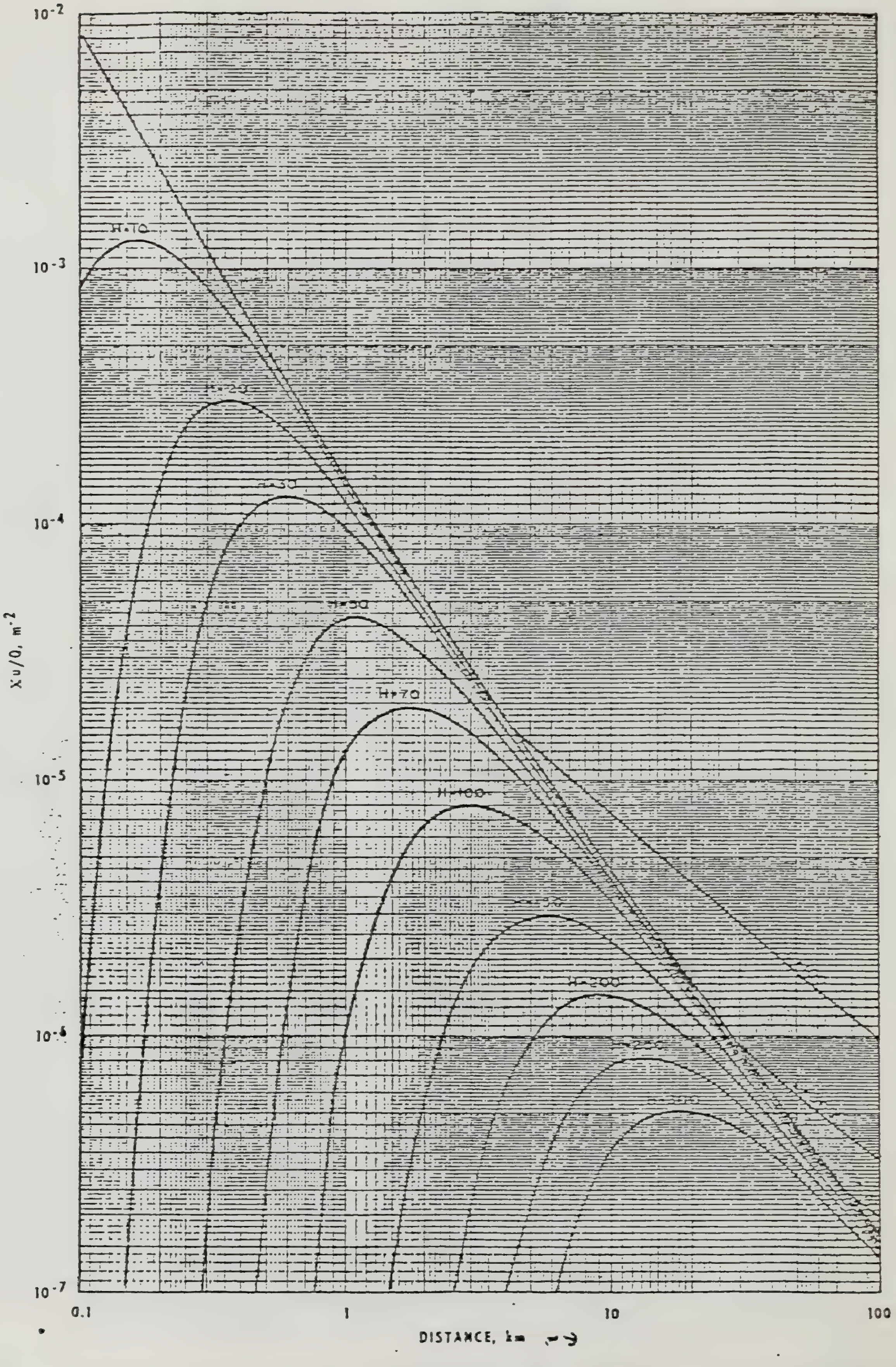


Figure 3-5D. χu/Q with distance for various heights of emission (H) and limits to vertical dispersion (L), D stabili

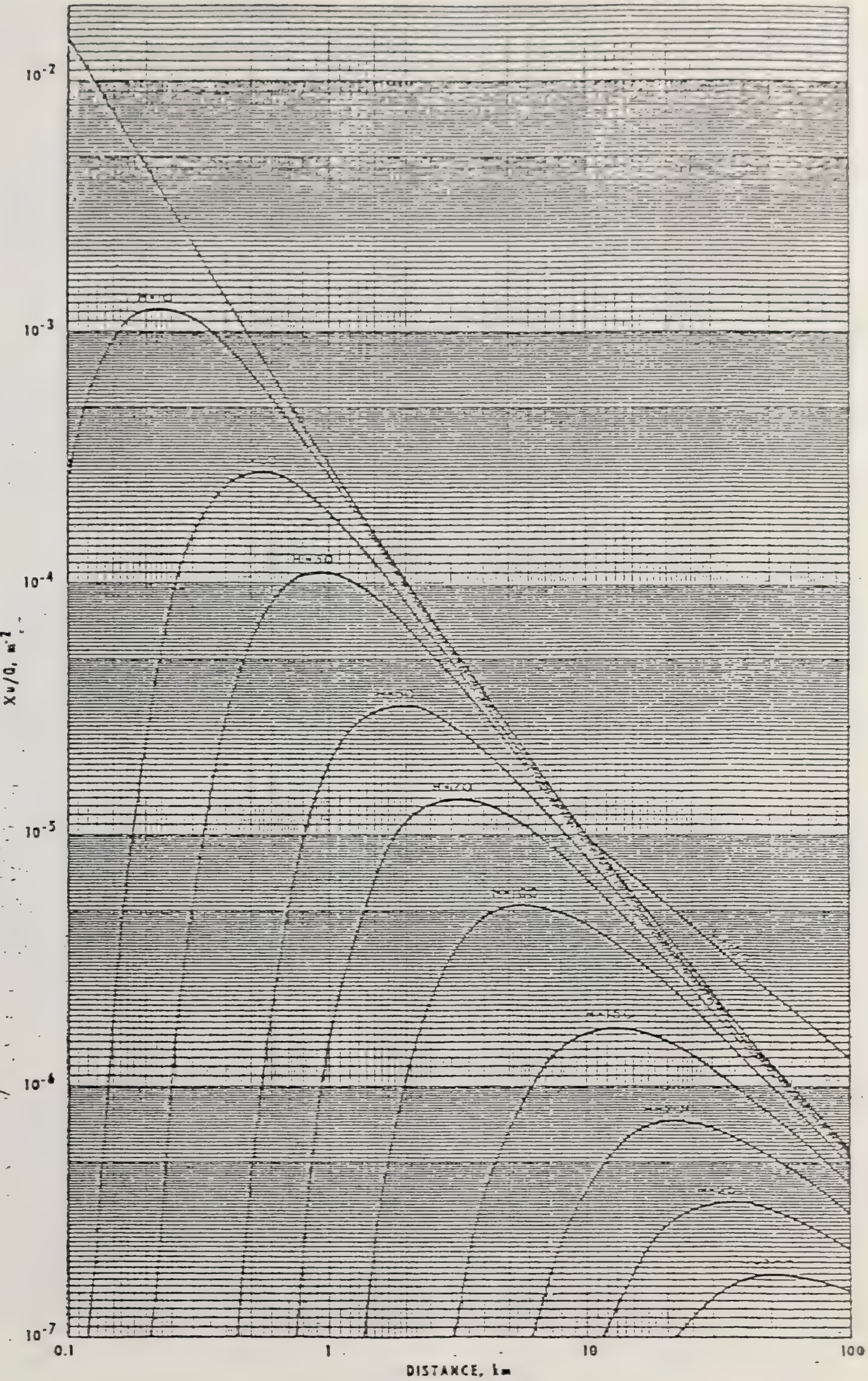
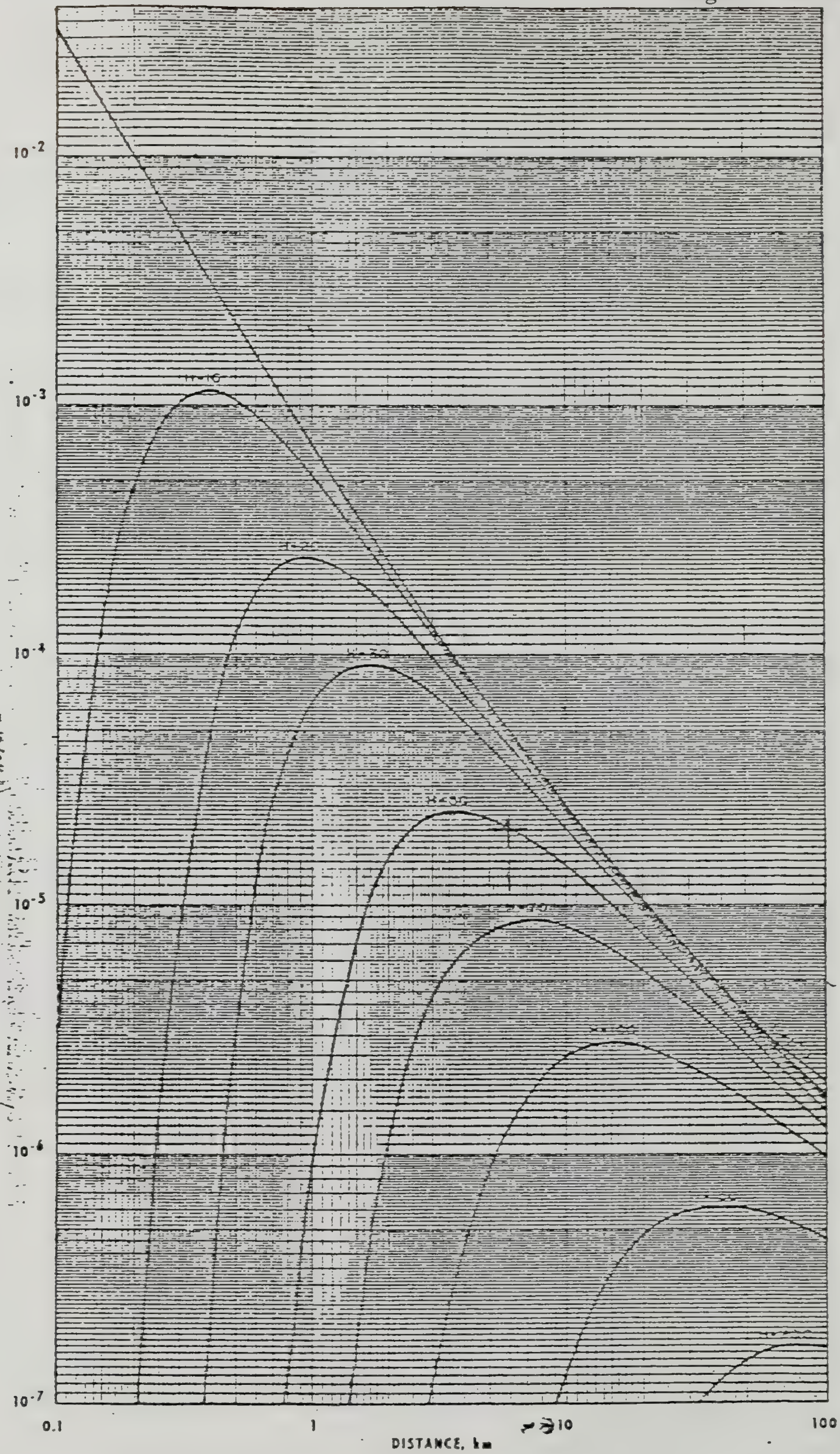


Figure 3-5E. χu/Q with distance for various heights of emission (H) and limits to vertical dispersion (L), E sta

Estimates



1/1000

2.4

1/10,000

Figure 3-5F. χu/Q with distance for various heights of emission (H) and limits to vertical dispersion (L), F stability.

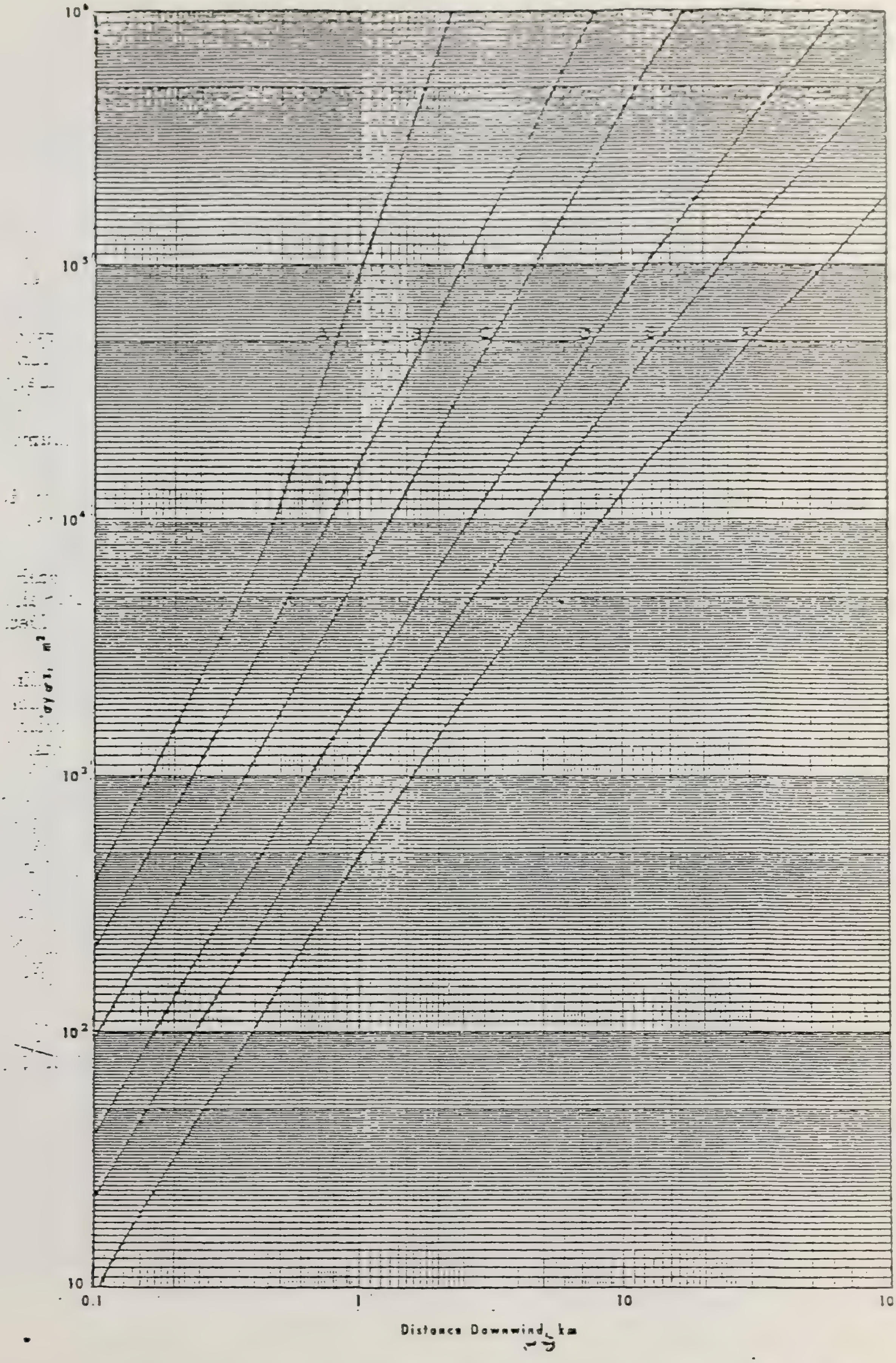
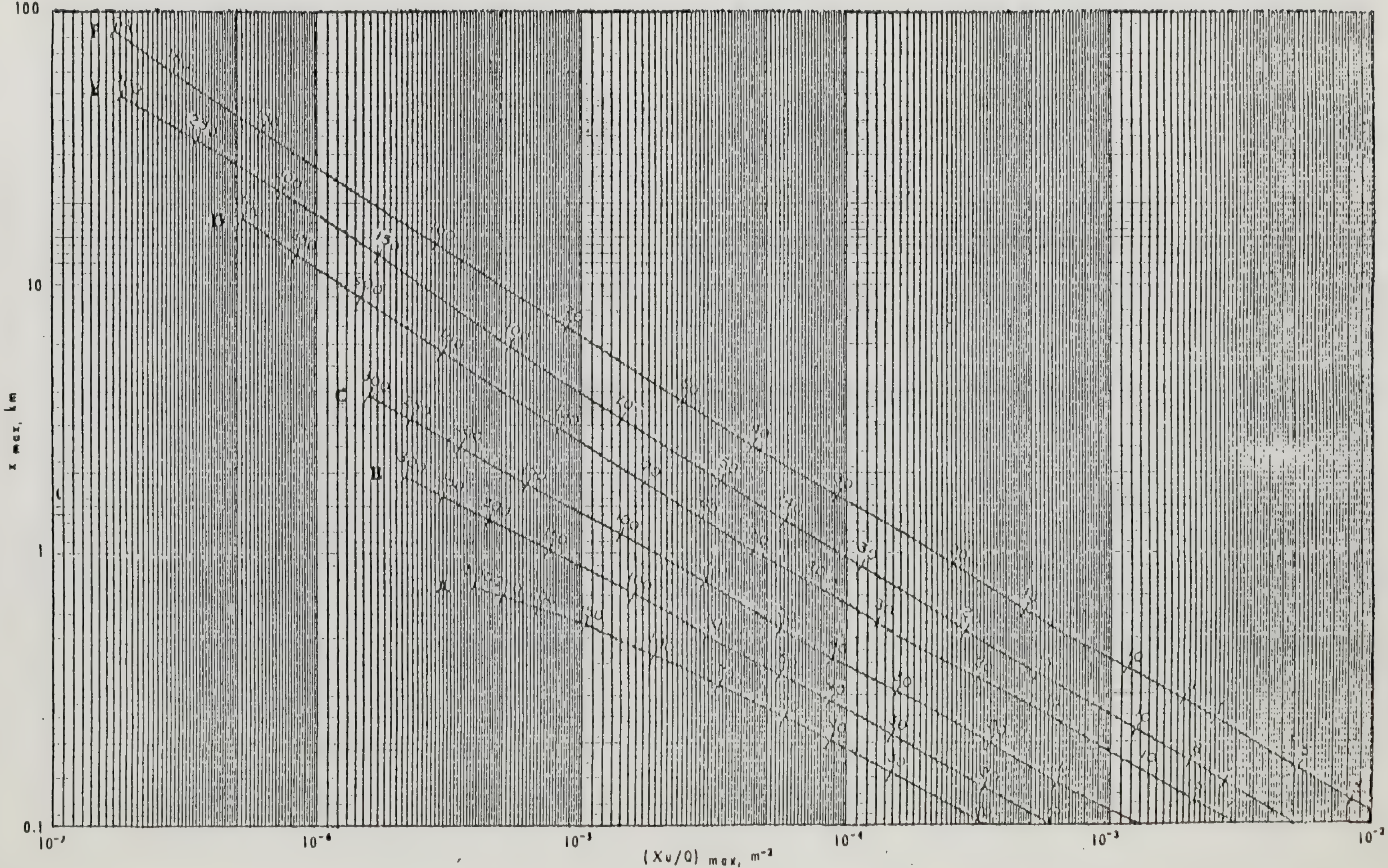


Figure 4-1. The product of $\sigma_y\sigma_z$ as a function of downwind distance from the source.



gure 3.0 Distance of maximum concentration and maximum χu/Q function of stability (curves) and effective height (meters) of emission

Estimates

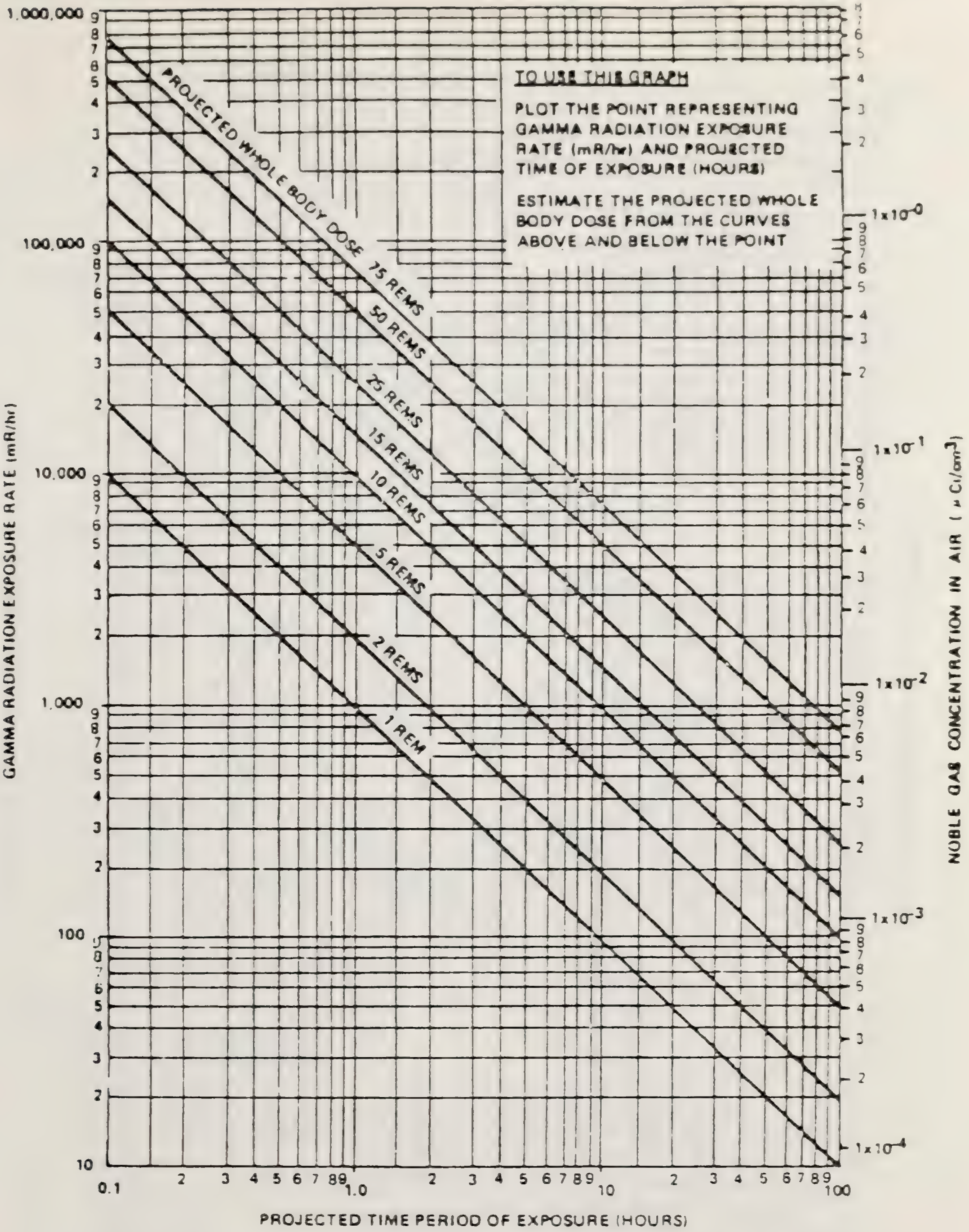
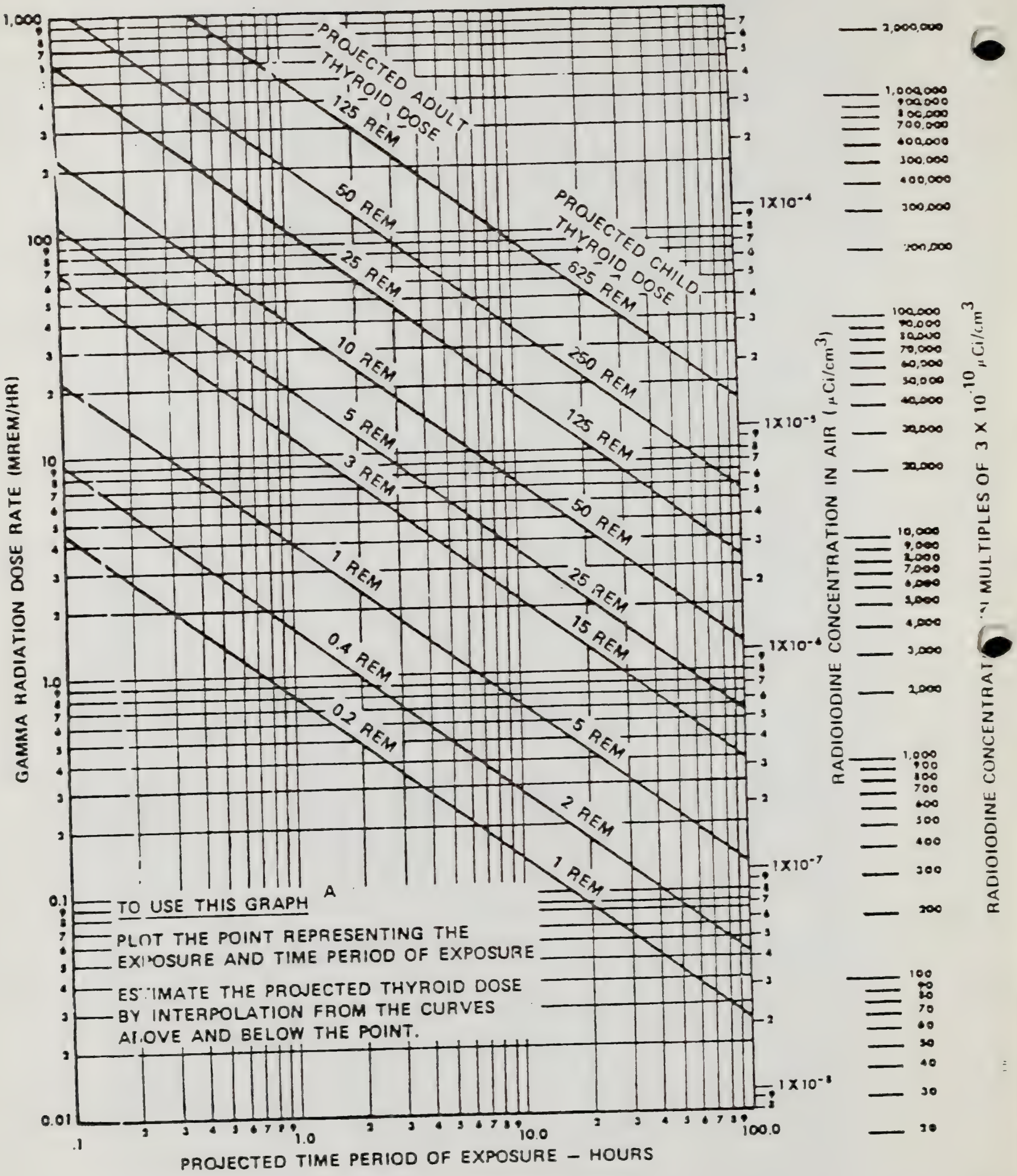


FIGURE 5.1—PROJECTED WHOLE BODY GAMMA DOSE AS A FUNCTION OF GAMMA RADIATION EXPOSURE RATE AND PROJECTED TIME PERIOD OF EXPOSURE



TO USE THIS GRAPH

PLOT THE POINT REPRESENTING THE EXPOSURE AND TIME PERIOD OF EXPOSURE

ESTIMATE THE PROJECTED THYROID DOSE BY INTERPOLATION FROM THE CURVES ABOVE AND BELOW THE POINT.

FIGURE 5.2 PROJECTED THYROID DOSE AS A FUNCTION OF GAMMA RADIATION EXPOSURE RATE AND PROJECTED TIME PERIOD OF EXPOSURE

A. USE OF THIS FIGURE ASSUMES THAT THE RADIOIODINE/NOBLE GAS ACTIVITY RATIO IS 0.3. IF IT IS KNOWN THAT THE RATIO HAS A LOWER VALUE, THE CORRECTION FACTOR GIVEN IN FIGURE 5.3 SHOULD BE USED.

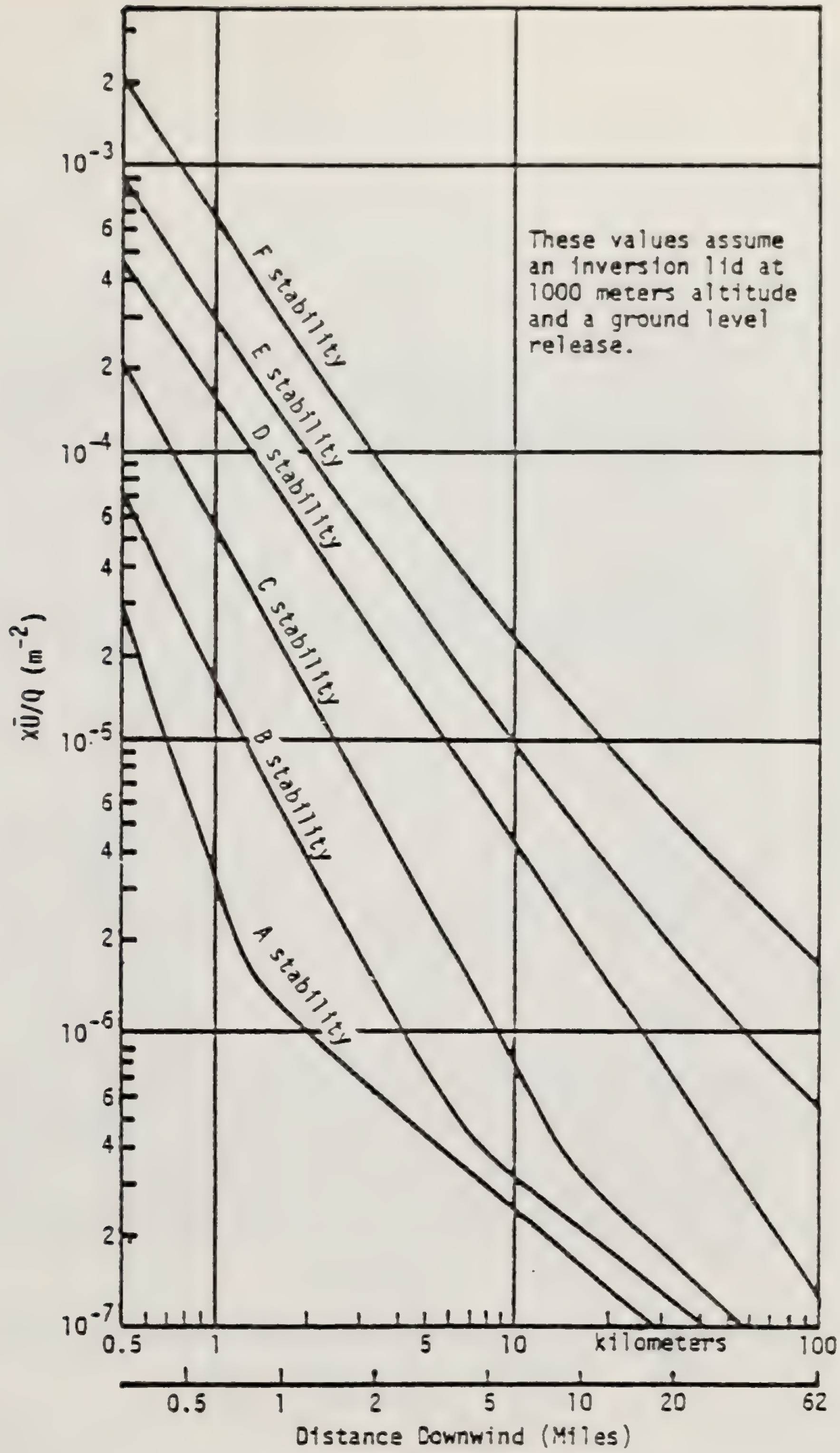
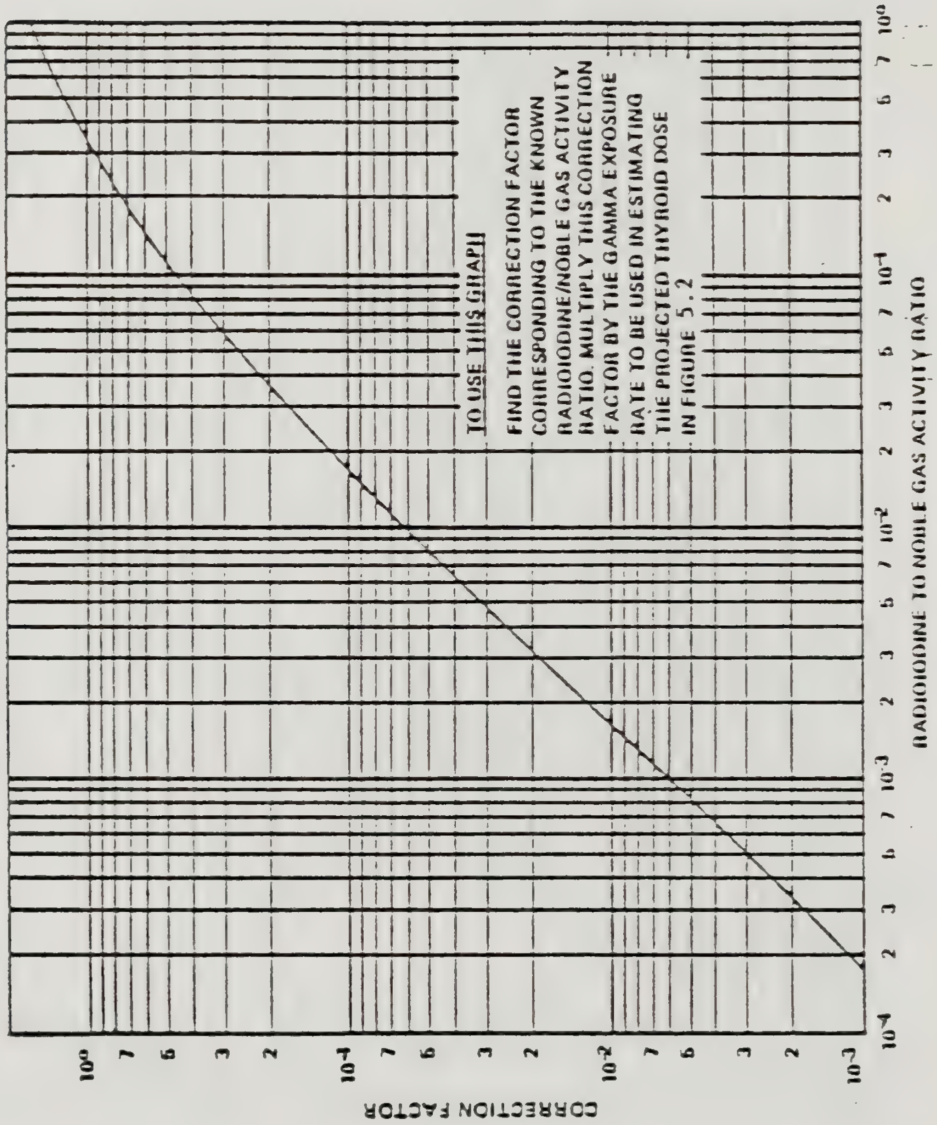


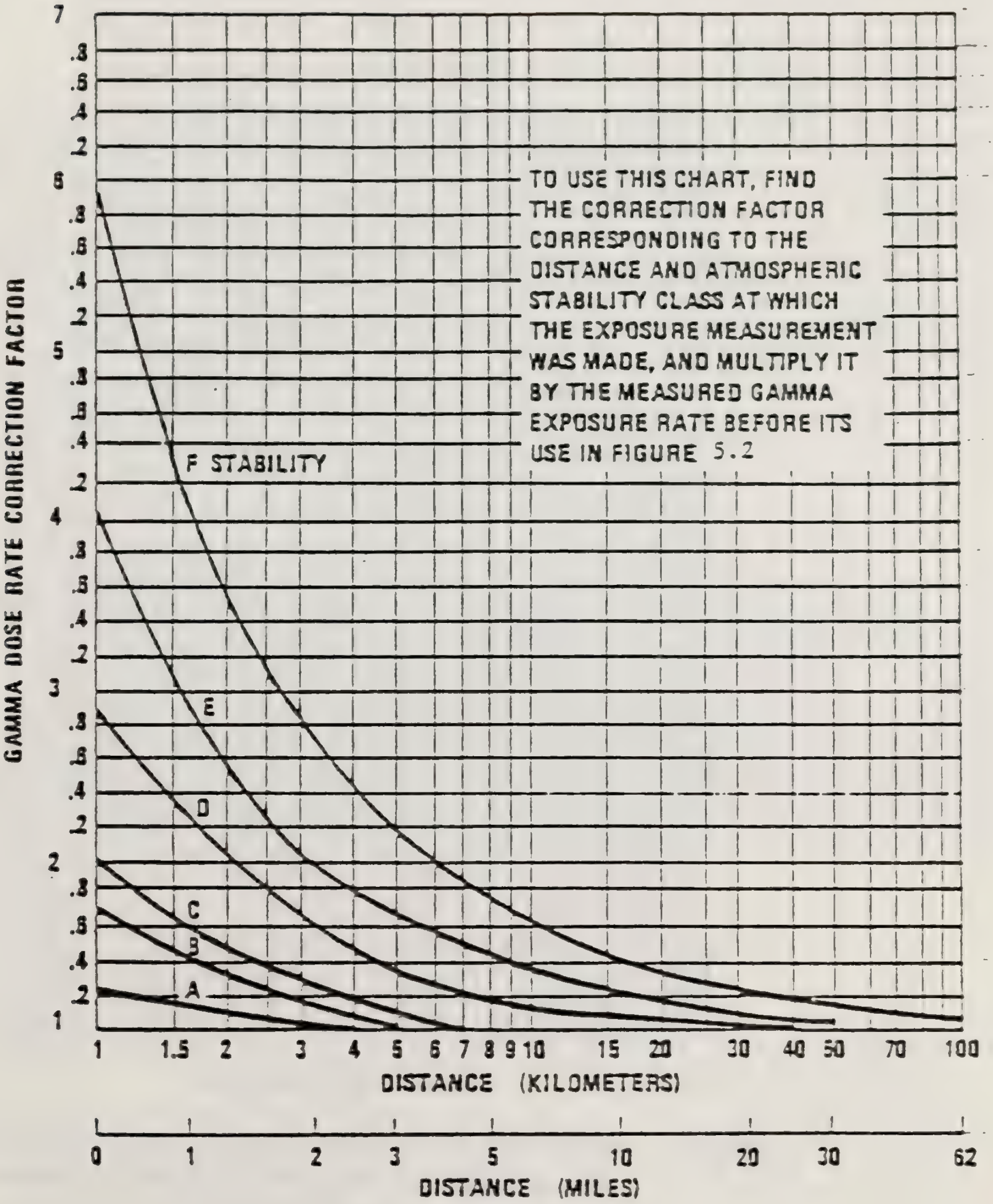
Figure 5.3 Typical values for $\chi\bar{U}/Q$ as a function of atmospheric stability class and downwind distance



TO USE THIS GRAPH

FIND THE CORRECTION FACTOR CORRESPONDING TO THE KNOWN RADIOIODINE/NOBLE GAS ACTIVITY RATIO. MULTIPLY THIS CORRECTION FACTOR BY THE GAMMA EXPOSURE RATE TO BE USED IN ESTIMATING THE PROJECTED THYROID DOSE IN FIGURE 5.2

Figure 5.4 Radioiodine release correction factor



TO USE THIS CHART, FIND THE CORRECTION FACTOR CORRESPONDING TO THE DISTANCE AND ATMOSPHERIC STABILITY CLASS AT WHICH THE EXPOSURE MEASUREMENT WAS MADE, AND MULTIPLY IT BY THE MEASURED GAMMA EXPOSURE RATE BEFORE ITS USE IN FIGURE 5.2

Figure 5.5 Gamma exposure rate finite cloud correction factor.

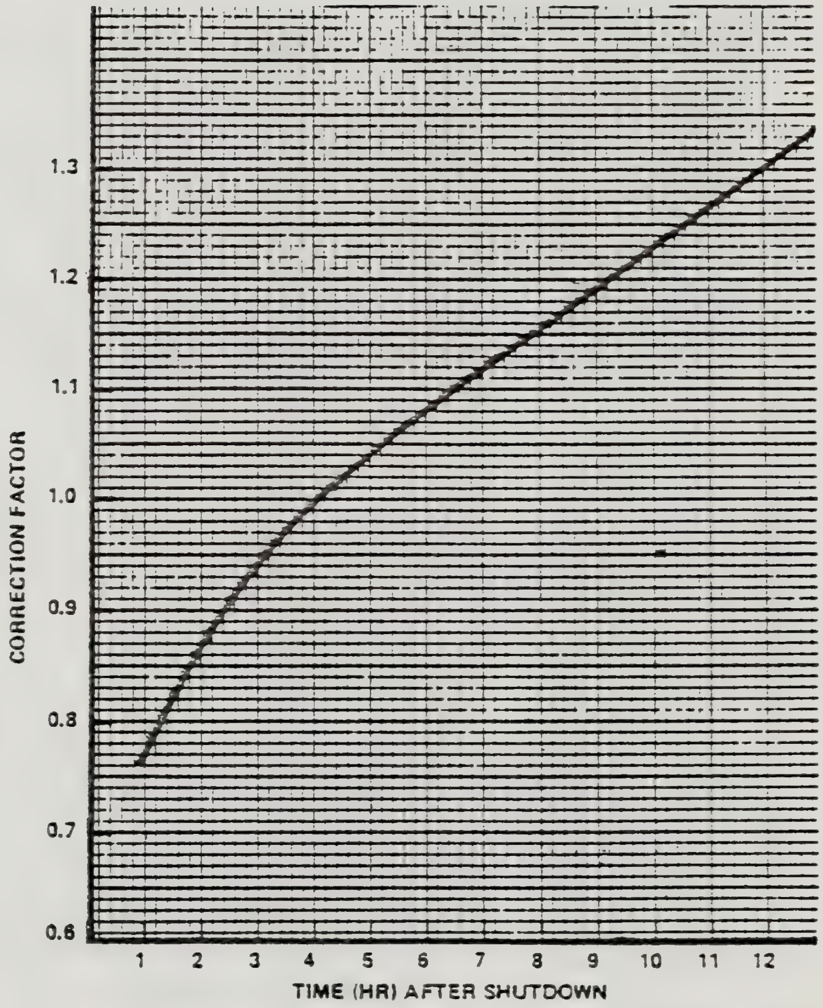


FIGURE 4.4 CORRECTION FACTORS FOR THYROID INHALATION DOSE AS A FUNCTION OF TIME AFTER REACTOR SHUTDOWN THAT RADIOIODINE CONCENTRATION IS MEASURED.

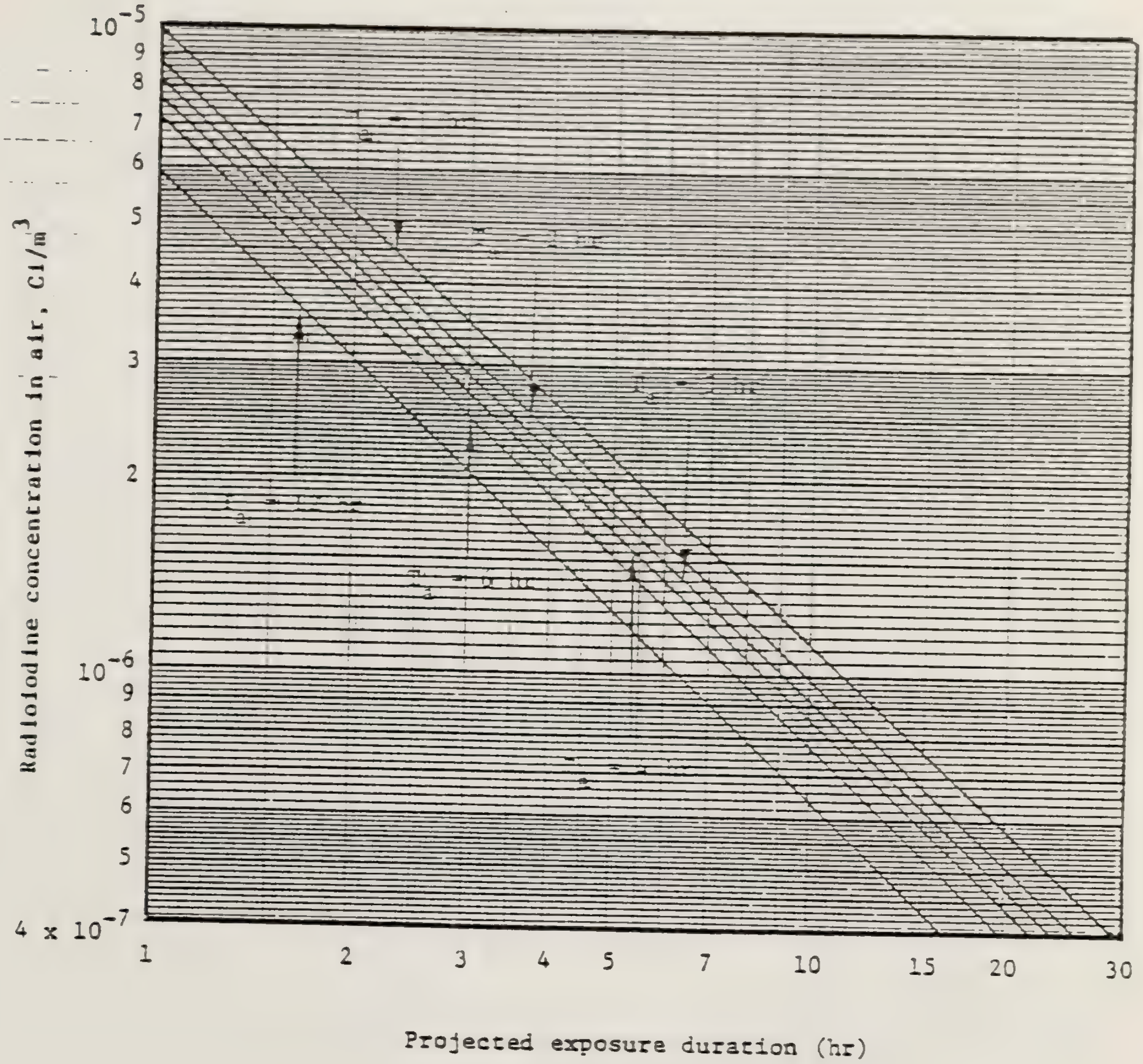


Figure 4.2. Five rem isodose line for child thyroid as a function of radioiodine concentration at the start of exposure, exposure duration and time after shutdown at which exposure begins, t_a.

NIAT HANDBOOK

This Handbook is designed for the use of NIAT Team members and cooperating agencies in the event of a nuclear incident. The Team will be alerted by calling the Massachusetts State Police at (617) 566-4500, extension 237, 238 or 239, or the Massachusetts Department of Public Health at (617) 727-2700. Official activation and coordination of the Team will be through the Massachusetts Department of Public Health.

Alfred L. Frechette M.D.

ALFRED L. FRECHETTE, M.D.
Commissioner of Public Health

JUNE 1979

NIAT HANDBOOK

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2. Purpose
3. Authority
4. Scope
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6. NIAT Response
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8. Response Guidelines - NIAT Advisors and Consultants

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A. Communications Brochure
B. Emergency Kits
C. Emergency Response Plans for Nuclear Power Stations
    1. Yankee Atomic Nuclear Power Company
       Rowe, Massachusetts
    2. Vermont Yankee Nuclear Power Station
       Vernon, Vermont
    3. Pilgrim Nuclear Power Station
       Plymouth, Massachusetts

INTRODUCTION

The Nuclear Incident Advisory Team (NIAT) is the action arm of the Department of Public Health concerned with radiation protection.

NIAT was developed in the early 1960's by the Massachusetts Department of Public Health in cooperation with the Massachusetts Commission on Atomic Energy, Department of Public Safety, Department of Labor and Industries, and the New England Chapter of the Health Physics Society. The Team consists of members (Department of Public Health employees) and consulting experts in the various fields associated with radioactive materials and are drawn from private, state and federal institutions, and industry.

NIAT is composed of six members, eleven advisors, and twenty-three consultants. Agencies cooperating with NIAT are:

the Massachusetts Civil Defense Agency;
the Massachusetts Department of Environmental Quality Engineering;
the Massachusetts Department of Food and Agriculture;
the Massachusetts Department of Labor and Industries;
the Massachusetts Department of Public Safety;
the United States Army (Fort Devens);
the United States Coast Guard;
the United States Department of Energy;
the United States Environmental Protection Agency;
the United States Food and Drug Administration;
the United States Nuclear Regulatory Commission;
the Massachusetts General Hospital; and,
the New England Radiological Health Compact.

The New England Radiological Health Compact ensures that there is a reciprocal, mutual radiation assistance program between the six New England states.

III.

This Handbook and its appendicies provide a working document which identifies: personnel (NIAT members and cooperating agencies); the location of field equipment; accessibility to a statewide communications system; guidelines for responding to an incident; protective action guides for a general incident; and, a separate appendix for each nuclear power plant.

PURPOSE

The purpose of NIAT is to provide the means of implementing protective actions against nuclear incident hazards.

AUTHORITY

Section 5B, Chapter 111, General Laws.

SCOPE

General incidents are handled as they develop by NIAT. Specific installations having quantities and types of radioactive materials which may, under accident conditions, pose a threat to the health and safety of the general public have their own inhouse emergency plans which are approved by the Department of Public Health. In the case of nuclear power plants, the Department has specific response plans for each plant, which are integrated with those of local, state and federal agencies and the industry. These plans are constantly updated and revised. They are tested in part by annual drills with each nuclear power plant.

COMMUNICATIONS

General

Police and Fire departments of each of the 351 communities within Massachusetts, the Massachusetts Civil Defense Agency, and the Massachusetts State Police have 24-hour access to the NIAT. This is detailed in Appendix A.

Site Specific

Communications procedures have been established between each operating reactor in or on the borders of Massachusetts and the Massachusetts Department of Public Health. They are detailed in the emergency plans of each reactor.

NIAT RESPONSE - GENERAL

The philosophy adopted herein is to establish general guidelines for you to follow and to have you rely on your personal experience to best handle the given situation.

Your responsibility is to assess a given situation, consult with the Department of Public Health, then make recommendations to the local authorities as to what actions should be taken.

RESPONSE GUIDELINES - NIAT MEMBERS

General

As a NIAT team member, your response to a radiation emergency will be guided by your professional judgement. Your responsibility is to have done whatever is necessary to protect the general public from accidental exposure to ionizing radiation.

Assistance is available to you from the sources listed in Appendix A.

Site Specific

State regulations require that the person having administrative and/or responsible control over one or more radioactive sources or machines which may emit ionizing radiation make an evaluation of his installation's nuclear incident potential and establish an emergency plan. In the event of a nuclear incident, the Department of Public Health shall be notified. NIAT will respond if necessary.

In the case of nuclear power reactors, specific emergency response plans are addressed in the Appendicies.

V.

RESPONSE GUIDANCE - NIAT ADVISORS AND CONSULTANTS

General

As a NIAT advisor or consultant, you may be called upon to respond to a nuclear incident. Your responsibilities are limited to advising local and/or state civil authorities as to the actual or potential dangers from the particular source involved in the incident. If any assistance is needed, call the Boston office,

The situation should be handled according to your professional judgement. The following checklist is suggested.

1. If you are notified by the Boston office, proceed to the incident.
2. If you are notified by anyone except the Boston office:
   a. Immediately notify the Boston office.

      Working hours: Boston office - (617) 727-6214, 6246, 6248

      Anytime: Mass. State Police - (617) 566-4500 x237, 238, 239.

      M.D.P.H. Answering Service - (617) 727-2700.

   b. Identify the call as a radiation emergency.

   c. Identify yourself and your location.

   d. Leave phone number where you can be reached.
3. Maintain log of events.
4. Notify licensee or his designee.
5. Survey area.
6. Identify sources and/or contaminants.
7. Isolate area.
8. Notify Boston office of situation.
9. Advise local authorities.

Site Specific

In the event that you are called upon to respond to a site specific emergency situation, you will be advised by a NIAT member as to what the situation is and how you can assist in correcting it.

APPENDIX A

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC HEALTH
600 WASHINGTON STREET
BOSTON, MASSACHUSETTS 02111

"NIAT"
COMMUNICATIONS BROCHURE
For Use of
Nuclear Incident Advisory Team

NIAT COMMUNICATIONS BROCHURE

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EMERGENCY TELEPHONE NUMBERS FOR REPORTING NUCLEAR INCIDENTS TO THE NUCLEAR INCIDENT ADVISORY TEAM (NIAT)

Week days - 8:45 a.m. to 5:00 p.m.

Massachusetts Department of Public Health	(617) 727-9710

Nights, Weekends and Holidays

Massachusetts State Police (Boston) - 24-Hour Coverage	(617) 566-4500 x237,238,239 (ask for Desk Sargent)

This list is to be used by the Massachusetts State Police for contacting NIAT. Beeper #97 (Group I) is assigned to NIAT and is on 24-hour standby. Please interrogate #97 first. If it doesn't respond, call:

Name	Work	Home
Mr. G. S. Parker (Brookline)	(617) 727-6214 " " 6246 " " 6248	(617) 734-1196
Mr. G. M. Swible (Malden)	(617) 727-6214 " " 6246 " " 6248	(617) 387-7768
Mr. E. M. Comproni (Hingham)	(617) 727-6214 " " 6246 " " 6248	(617) 749-0214
Mr. W. J. Bell (Amherst)	(617) 727-6214 " " 6246 " " 6248	(413) 253-3816

NUCLEAR INCIDENT ADVISORY TEAM MEMBERS

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

Name	Business Address Area Code and Tel. No.	Home Address Area Code and Tel. No.
Bell, William	600 Washington Street Boston, Mass. 02111 617-727-6214	394C Crown Point Amherst, Mass. 01002 413-253-3816
Comproni, Elise	600 Washington Street Boston, Mass. 02111 617-727-6214	8 Village Lane Hingham, Mass. 02043 617-749-0214
Giordano, Ralph	600 Washington Street Boston, Mass. 02111 617-727-6214	120 S. High Street Foxboro, Mass. 02035 617-543-6510
LaCortiglia, John	600 Washington Street Boston, Mass. 02111 617-727-6214	15 Kennedy Drive Saugus, Mass. 01906 617-233-2257
Parker, Gerald	600 Washington Street Boston, Mass. 02111 617-727-6214	12 Lowell Road Brookline, Mass. 02146 617-734-1196
Swible, George	600 Washington Street Boston, Mass. 02111 617-727-6214	86 Hadley Street Malden, Mass. 02148 617-387-7768

NUCLEAR INCIDENT ADVISORY TEAM ADVISORS

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING

Name	Business Address Area Code and Tel. No.	Home Address Area Code and Tel. No.
Anderson, Paul T.	Southeast Region Lakeville Hospital Lakeville, Mass. 02346 617-947-1231 x224	RFD 2 Winter Street Middleboro, Mass. 02346 617-947-0218
Delaney, John	Lawrence Experiment Station Lawrence, Mass. 01843 617-682-5237	104 So. Bowdoin Street Lawrence, Mass. 01843 617-682-4787
Donovan, Robert	Southeast Region Lakeville Hospital Lakeville, Mass. 02346 617-947-1231 x224	20 Hersey Lane Abington, Mass. 617-878-7924
Iantosca, Angelo	Western Ma. Health District University of Mass. Amherst, Mass. 01002 413-545-2610	138 Fairview Way Amherst, Mass. 01002 413-549-1163
Joly, Gilbert R	Central Region 75 Grove Street Worcester, Mass. 01605 617-754-3226	75 Hillcroft Avenue Worcester, Mass. 01606 617-853-8604
Maillet, Bruce	Regional Air Quality Section Room 320, 600 Washington St. Boston, Mass. 02111 617-727-5194	13 Job Cushing Road Shrewsbury, Mass. 01545 617-845-1340
O'Leary, Cornelius	Room 1901, 100 Cambridge St. Boston, Mass. 02202 617-727-3170 " " 5617 " " 2690	20 Summit Road Wellesley, Mass. 617-237-0422
Rondeau, Roger A.	Central Region 75 Grove Street Worcester, Mass. 01605 617-754-3226	204 Lincoln Street Franklin, Mass. 02038 617-528-2206
Cortese, Anthony Sc.D.	Commissioner, D.E.Q.E. 100 Cambridge Street Boston, Mass. 02201 617-727-2690	41 Pershing Road Jamaica Plain, Mass. 02130 617-524-4908

NUCLEAR INCIDENT ADVISORY TEAM ADVISORS

MASSACHUSETTS DEPARTMENT OF LABOR & INDUSTRIES

Name	Business Address Area Code and Tel. No.	Home Address Area Code and Tel. No.
Bavley, Harold	39 Boylston Street 9th Floor Boston, Mass. 02116 617-727-3982	45 Parkway Crescent Milton, Mass. 02187 617-696-5822
Archibald, Frank	39 Boylston Street 9th Floor Boston, Mass. 02116 617-727-3982	330 Mystic Street Arlington, Mass. 02172 617-643-1433

NUCLEAR INCIDENT ADVISORY TEAM

CONSULTANTS TO THE DEPARTMENT OF PUBLIC HEALTH

Name	Business Address Area Code and Tel. No.	Home Address Area Code and Tel. No.
Andognini, G. Carl	Boston Edison 800 Boylston Street Boston, Mass. 02199 617-424-2918	9 Minuteman Way Shrewsbury, Mass. 01545 617-842-4194
Bedrosian, Paul	Environmental Protection Agency J. F. K. Building Boston, Mass. 02213 617-223-0400	2 Lancaster Place Andover, Mass. 617-475-2668
Chabot, George	Health Physics Supervisor Nuclear Center Lowell Technological Inst. Lowell, Mass. 617-452-5000 x2736	2 Eugley Park East North Reading, Mass. 617-664-5167
Devlin, Robert	Safety Engineer New England Nuclear Corp. 549 Albany Street Boston, Mass. 02118 617-482-9595	214 Riverside Drive Dedham, Mass. 617-329-5796
Freiberg, Charles	-------------	53 Cedarcrest Road W. Roxbury, Mass. 02132 617-323-8998
Gaeta, Neil	N.E.R.H.L. 109 Holton Street Winchester, Mass. 617-729-5700	35 Grove Street W. Medford, Mass. 617-488-7081
Hallisey, Robert	Region I Radiological Health Representative EDRO, Food & Drug Adm. 585 Commercial Street Boston, Mass. 02109 617-223-3178, 3179	2 Summit Avenue Winchester, Mass. 617-729-5728
Holsinger, Dorsey	Yankee Atomic Electric Co. 20 Turnpike Road Westborough, Mass. 617-366-9011 x367	103 Spitbrook Road Nashua, New Hampshire 603-888-0402

NUCLEAR INCIDENT ADVISORY TEAM

CONSULTANTS TO THE DEPARTMENT OF PUBLIC HEALTH

Name	Business Address Area Code and Tel. No.	Home Address Area Code and Tel. No.
Johnson, Robert	Harvard University 75 Mt. Auburn Street Cambridge, Mass. 02138 617-495-2061	31 Chipman Road Beverly, Mass. 01915 617-922-9014
Karaian, Edward	M. I. T. 138 Albany Street Cambridge, Mass. 02139 617-253-4203	30 Klasson Lane Weymouth, Mass. 617-337-9602
Karp, William	Interex Corporation 3 Strathmore Road Natick, Mass. 617-237-6650	9 Arlene Drive Framingham, Mass. 617-879-0501
Keene, Byron	Chief, Radiation and Noise Branch Categorical Programs Div. Environmental Protection Agency J. F. K. Building Boston, Mass. 617-223-5708	3 Cottage Avenue Winchester, Mass. 617-729-8356
Killian, Charles	Director of Environmental Control Department New England Nuclear Corp. 549 Albany Street Boston, Mass. 02118 617-482-9595 x2504	79 St. George St. Duxbury, Mass. 617-934-6042
Levin, Samuel	M. I. T. - Room 20B-238 77 Massachusetts Avenue Cambridge, Mass. 617-253-2180, 2360	35 Cotton Street Newton, Mass. 617-332-3048
Mac Donald, James	Yankee Atomic Electric Co. 20 Turnpike Road Westborough, Mass. 617-366-9011 x56-336	17 Spruce Street Hudson, New Hampshire 03051 603-882-6194
Massee, Francis	M.I.T. - Linac Maple Street Middleton, Mass. 617-245-6600	P. O. Box 95 Middleton, Mass. 617-267-3300 (24-hour answering service)

NUCLEAR INCIDENT ADVISORY TEAM

CONSULTANTS TO THE DEPARTMENT OF PUBLIC HEALTH

Name	Business Address Area Code and Tel. No.	Home Address Area Code and Tel. No.
Molloy, Edward	Stone & Webster Engineering Corp. P.O. Box 2325 (235/13) Boston, Mass. 02107 617-973-7235	26 Lyme Street E. Weymouth, Mass. 02189 617-337-2263
Robinson, John	Yankee Atomic Electric Co. 20 Turnpike Road Westborough, Mass. 617-366-9011 x56-334	71 Pond Road Duxbury, Mass. 02331 617-934-5820
Santangelo, John	----------	RFD #3 Buzzards Bay, Mass. 02532 617-759-2031
Skrable, Kenneth	Nuclear Center Lowell Technological Inst. Lowell, Mass. 617-482-5000 x2235 (Yankee: 617-366-9011 x254)	6 Ruthellen Road Chelmsford, Mass. 617-256-8282
Spaulding, Charles	N. E. Deaconess Hospital 185 Pilgrim Road Boston, Mass. 02215 617-732-8283	124 Walnut Street Reading, Mass. 617-944-2202
Swetnam, Ronald	Boston Edison Company 800 Boylston Street 26th Floor Boston, Mass. 617-424-2000	82 Salt Meadow Way Marshfield, Mass. 617-837-3659
Youngstrom, Kenneth	Manomet Bird Observatory Manomet, Mass. 02345 617-224-6521	Thatcher Road RFD #6 Plymouth, Mass. 02360 617-224-6672

CONTACT NAMES, ADDRESSES AND TELEPHONE NUMBERS OF NIAT AND COOPERATING AGENCIES

Agency	Contact	Tel. No.	Tel. No. - Nights Weekends & Holidays
Department of Public Health Radiation Control Program Rm. 770, 600 Washington St. Boston, Mass. 02111	Gerald S. Parker	617-727-6214 " " 6246 " " 6248	617-734-1196 (Brookline)
	George M. Swible	" " "	617-387-7768 (Malden)
	Elise M. Comproni	" " "	617-749-0214 (Hingham)
	William J. Bell	" " "	413-253-3816 (Amherst)
Department of Environmental Quality Engineering Division of Environmental Health 100 Cambridge Street, Rm. 1901 Boston, Mass.	Cornelius O'Leary	617-727-3170 " " 5617 " " 2690	617-237-0422 (Wellesley)
Civil Defense Agency 400 Worcester Road Framingham, Mass.	Main Headquarters	617-237-0200	617-237-0200 (Duty Officer)
	Duty Officer	617-875-1381	617-875-1381
Dept. of Labor & Industries Div. of Occupational Hygiene 39 Boylston St., 9th Floor Boston, Mass. 02116	Harold Bavley	617-727-3982	617-696-5822 (Milton)
	Frank Archibald	" " "	617-643-1433 (Arlington)
Dept. of Public Safety Mass. State Police 1010 Commonwealth Ave. Boston, Mass. 02215		617-566-4500 617-566-5126	x237,238,239
U. S. Coast Guard 150 Causeway St. Boston, Mass. 02190	Capt. of the Port Search & Rescue	617-223-3644 (Boston)	617-223-3644 (Duty Officer)
U. S. Army Garrison Fort Devens Chemical Office	Training Officer	617-796-2212	617-796-3711
	Post C.B.R.	" " 2332	" " 3712
	NBC School	" " 3103	(Staff Officer - Fort Devens)

CONTACT NAMES, ADDRESSES AND TELEPHONE NUMBERS OF NIAT AND COOPERATING AGENCIES

Agency	Contact	Tel. No.	Tel. No - Nights Weekends & Holidays
U. S. Department of Energy (Radiological Assistance Program) Brookhaven Area Office Brookhaven, New York		516-345-2200	516-345-2200
Environmental Protection Agency Radiation Branch Boston, Mass.	Byron Keene	617-223-5708	617-729-8356 (Winchester)
Federal Bureau of Radiological Health Boston	Robert Hallisey	617-223-3179	617-729-5728 (Winchester)
EPA Regional Office New York	Paul A. Giardina	212-264-4418	212-986-6752 516-324-6594
FDA Regional Office New York	Ronald Bernacki	212-965-5052	516-367-3543
Defense Civil Preparedness Agency Maynard, Mass.		617-223-6230	617-897-9381
M.D.C. Police Boston	Adm. Planning	617-727-5220 " " 5224 617-523-1212	617- 727-5220 " " 5224 617-523-1212
Boston Police Department Boston		617-247-4911	617-247-4911
Boston Fire Department Boston		617-247-4911	617-247-4911
Massachusetts General Hospital (Emergency Ward) Boston		617-726-2000	617-726-2000
Logan Airport East Boston, Mass.		617-223-3110 617-569-2064	617-223-3110 617-569-2064

APPENDIX B

EMERGENCY KITS

A. Location and Contact Person for each Emergency Kit.

B. Kit Contents

A.

LOCATION & CONTACT PERSON FOR EACH NIAT KIT

1. BOSTON

Gerald S. Parker, P.E.
Assistant Commissioner
Massachusetts Department of
Public Health
Room 770
600 Washington Street
Boston, Massachusetts 02111
OFFICE: 617-727-6214
HOME: 617-734-1196

2. LAWRENCE

John Delaney
Lawrence Experiment Station
37 Shattuck Street
Lawrence, Massachusetts
OFFICE: 617-682-5237
HOME: 617-682-4787

3. AMHERST

Angelo Iantosca
Public Health Center
University of Massachusetts
Amherst, Massachusetts
OFFICE: 413-545-2610; 549-1917, 6442
HOME: 413-549-1163

4. WORCESTER

Roger Rondeau
D.E.Q.E.
Central Region
75 Grove Street
Worcester, Massachusetts 01605
OFFICE: 617-754-3226
HOME: 617-528-2206

5. TEWKSBURY

Ken Tarbell
Tewksbury State Hospital
Tewksbury, Massachusetts
OFFICE: 617-851-7261
HOME: 617-457-7749

6. LAKEVILLE

Paul Anderson
Lakeville Hospital
Main Street
Lakeville, Massachusetts
OFFICE: 617-947-1231
HOME: 617-947-0218

INVENTORY OF RADIOLOGICAL INSTRUMENTS FOR NIAT KITS

Location Instrumentation	1 BOSTON	2 LAWRENCE	3 AMHERST	4 RUTLAND	5 TEWKSBURY	6 LAKEVILLE
Alpha	1 Eberline PAC 1 SAG Alpha Survey Meter 2 Eberline PAC-4S	1 Eberline PAC 1 SAG Alpha Survey Meter				
Beta, Gamma	1 Mod. 121 G.M.N.C. 4 Eberline G.M.-E 120 2 N.C.-G.M. 1 Eberline PAC 4S 7 Head Phones & 3 speakers	1 NC-GM with speakers & headphone	1 NC-GM with speakers & headphone	1 Mod 121-NC GM with speakers & headphone	1 Mod 121-NC GM with speakers & headphone	1 NC-GM with [illegible] 1 Mod 121 GM. & headphone
Alpha, Beta, Gamma	1 Victoreen Survey Meter 1 Juno Survey Meter 2 Nuclear C. Survey Meter	1 Juno Survey Meter (Cutie Pie)	1 N.C. Cutie Pie 1 Juno Survey Meter (Cutie Pie)			
Dosimeters	5/0-200MR 4/0-20R 9	6	3	5/0-200MR 4/0-20R 3	— 8	4/0-20R 5/0-200MR 7
Dosimeters Chargers	2	1	1	1	1	1
Film Badges	2	2	2	2	2	2

ANNEX 1 PROTECTIVE RESPONSE -- PLUME EXPOSURE PATHWAY

A. INTRODUCTION

This Annex describes the relative merits of various protective actions which could be taken to reduce the effects of exposure to radioactive airborne releases, and exposure to radioactive materials deposited on the ground as a result of a passing plume.

The concepts and actions described are the basis upon which State guidance to local governments was developed, and, as such, support the operational concepts and procedures of Area and local plans in Sections C, D, and E of this Plan.

B. NATURE OF PLUME EXPOSURE PROTECTIVE ACTIONS

The single most important radiation pathway to people during the emergency phase of a radiation accident is probably by air. The air pathway will be via inhalation of either gases or particulates, and whole body exposure to a passing plume.

Several protective actions can help to meet the goal of minimizing both early and delayed somatic effects of radiation exposure and increased genetic effects. Which mix of protective actions is carried out will depend, in large measure, upon: environmental constraints (weather and geography); time constraints (distance from site, nature of release) and available resources. Available protective actions are:

1. Evacuation of All or Selected Segments of the Population at Risk

While evacuation is in many respects the most attractive protective action available, since, potentially, all additional radiation exposure can be avoided, several key constraints, including weather, highway conditions and peak population characteristics may render evacuation ineffective or undesirable. Figure B1-1 summarizes the advantages and constraints of evacuation as a protective action.

Figure B1-2 illustrates the time components of various segments of total evacuation time, and approximate time estimates for carrying them out. The highest total figure (6 hours) is consistent with worst case clear time estimates developed in conjunction with evacuation route selection for the plans appearing in Sections C, D and E. (The 6 hour estimate involves clear time of coastal sectors south of Pilgrim nuclear power station during peak seasonal and transient population periods. Conservative estimates of 2,000 cars per hour per traffic lane were used to develop these estimates.)

Figure B1-1

EVACUATION AS A PROTECTIVE ACTION

ADVANTAGES

- MOST EFFECTIVE METHOD OF AVOIDING RADIATION EXPOSURE.
- CAN PROVIDE TOTAL PROTECTION IF IMPLEMENTED IN TIME.
- RISKS ASSOCIATED WITH EVACUATION BY AUTOMOBILE ARE SMALL.
- COSTS OF EVACUATION ARE SMALL.

CONSTRAINTS

- MAY NOT BE PRACTICAL FOR POPULATIONS OVER 200,000.
- ACCIDENT RISKS ASSOCIATED WITH TRAVEL.
- SOCIAL AND ECONOMIC DISLOCATIONS.
- ENVIRONMENTAL CONSIDERATIONS (GEOGRAPHICAL AND METEOROLOGICAL).
- DEMOGRAPHIC CONSIDERATIONS (DENSITY AND DISTRIBUTION OF POPULATION, POPULATION SIZE, AGE, AND HEALTH STATUS).
- SITE SPECIFIC CONDITIONS (NUMBERS, TYPES, AND DIRECTIONS OF ROADS).
- LITTLE ADVANTAGE IN SELECTIVE EVACUATION OF CRITICAL SEGMENTS OF THE POPULATION.
- MOVEMENT OF LARGE GROUPS OF PEOPLE WILL AGGREVATE HEALTH CONDITIONS OF CERTAIN MEMBERS OF THE GROUP.

Figure B1-2

EVACUATION TIME

$$T_{EV} = T_D + T_N + T_M + T_T$$

TIME SEGMENT	APPROXIMATE RANGE OF HOURS
T_D - DECISION TIME	0.5 - 1.5
T_N - TIME TO NOTIFY POPULATION	0.2 - 1.0
T_M - TIME FOR MOBILIZATION	0.2 - 2.0
T_T - TRAVEL TIME	0.2 - 1.5
TOTAL	1.1 - 6.0*

*TIME MAY BE LONGER FOR POPULATIONS OVER 200,000-500,000

2. SEEKING SHELTER

Generally, shelter provided by dwellings with windows and doors closed and ventilation turned off would provide good protection from inhalation of gases and vapors for short periods, but would be generally ineffective after about two hours due to natural ventilation of the shelter.

Figure B1-3 summarizes the advantages and constraints of shelter as a protective action.

3. Access Control

Figure B1-4 illustrates the advantages and constraints of access control as a protective action. As indicated, access control can be highly effective in avoiding exposure of personnel who might otherwise enter high exposure areas. Access control points have been pre-established in each local plan within the plume-exposure emergency planning zone, as well as at key points to be manned by the State Police. These pre-established access control points should permit control of access at highly flexible perimeters.

4. Respiratory Protection

Radiation exposure from inhalation of gaseous or particulate radionuclides may be reduced by the use of respirators. However, general use of respiratory protection is not a part of this plan because of several constraints: 1) Suitable devices may not be available, especially for women and children, the most radiation sensitive part of the population; 2) to be effective, respirators must be individually fitted and on hand for immediate use.

This plan accordingly limits consideration of respiratory protection as a protective action to emergency service workers already equipped and trained to use these devices.

5. The uptake of inhaled or ingestion radioiodine by the thyroid gland may be reduced by the ingestion of stable iodine. The oral administration of about 130 milligrams of potassium iodide will result in sufficient accumulation of stable iodine in the thyroid to prevent significant uptake of radioiodine.

Provisions have been made by each locality, in its local radiological emergency response plan, for authorizing distribution of potassium iodine. The Massachusetts Department of Public Health is developing a policy to govern such distribution, and examining resources available to permit strategic stockpiling of this drug in tablet form.

Figure B1-3

SHELTER AS A PROTECTIVE ACTION

ADVANTAGES

- CAN PROVIDE SIGNIFICANT REDUCTIONS IN WHOLE BODY AND INHALATION DOSES.
- RELATIVELY NONDISRUPTIVE, RAPID AND EASY ACTION TO TAKE.
- RISKS OF SEEKING SHELTER ARE SMALL.
- COSTS ASSOCIATED WITH SHELTERING ARE RELATIVELY SMALL.
- SHELTERING CAN BE EFFECTIVELY USED IN CONJUNCTION WITH OTHER PROTECTIVE ACTIONS SUCH AS EVACUATION.
- CAN BE MORE EFFECTIVE THAN OTHER ACTIONS FOR REDUCING POPULATION EXPOSURES TO RELEASES OF SHORT DURATION.

CONSTRAINTS

- AFTER 1 TO 2 HOURS, SHELTER OFFERS ONLY MINIMAL PROTECTION.
- LARGE SHELTERS (BUILDINGS) MAY NOT HAVE ANY PROTECTIVE ADVANTAGE FOR THYROID REDUCTION BECAUSE OF LARGE VENTILATION RATE.
- CHANGES IN INDOOR CONCENTRATIONS OF GASEOUS AND PARTICULATE MATERIAL FOLLOW CHANGES IN OUTDOOR CONCENTRATIONS WITH A SHORT LAG TIME.
- IN GENERAL, SHELTER IS ONLY EFFECTIVE FOR WHOLE BODY AND THYROID DOSE REDUCTION FOR LOW VENTILATION RATES AND FOR SHORT TIME PERIODS.

Figure B1-4

ACCESS CONTROL AS A PROTECTIVE ACTION

ADVANTAGES

- THE SIMPLEST, MOST EFFECTIVE MEANS OF PREVENTING RADIATION EXPOSURE TO PERSONS OUTSIDE THE AREA OF RELEASE.
- RISKS ARE SMALL.
- COSTS ARE SMALL.

CONSTRAINTS

- REQUIRES EFFECTIVE COMMUNICATION NETWORK.

C. PROTECTION ALTERNATIVES -- EVACUATION VS. SHELTER

During emergency conditions, the process of evaluating, deciding on, recommending, and implementing protective actions is far from being an exact science, particularly in view of time constraints that might prevent the process from being more thorough. Precision, however, can be considerably improved by a planned and orderly approach to an emergency, which will result in more reliable decisionmaking. The approach for planners given in this Appendix can be stated as follows: Whether or not time constraints and available information permit a reasonably thorough evaluation of the protective action options following a facility accident, planners can formulate initial plans for making early decisions based on guidance provided by "rules of thumb". Accordingly, aside from the actual experience or repeated scenario exercises held on the local level, considerable insight may be gained by reviewing the general guidance principles or "rules of thumb" given below:

1. Evacuation may provide total protection for any source-release magnitude if completed in time. Sheltering may be an appropriate alternative because:

   a. It is probably less expensive and less disruptive,
   b. It may be faster than evacuation,
   c. It can provide adequate protection in many cases,
   d. A large majority of the public may already be sheltered at any given time.

   Sheltering, however, is not attractive for:

   a. Long duration of exposure,
   b. Very large projected doses.

2. Because sheltering is probably less expensive and less disruptive than evacuation, it may be the protective action of choice when the dose reduction factor associated with shelter is adequate to reduce the projected dose to less than PAG levels. Estimated Dose Reduction Factor (DRF) values are shown in Figure B1-5.

3. Because sheltering may be implementable in less time than evacuation, it may be the protection action of choice if rapid evacuation is impeded for any reason, e.g.:

   a. Short time available--high wind velocity, location close to source;
   b. Environmental conditions--weather, flood;
   c. Health constraints--hospitals, nursing homes;
   d. Public safety considerations--prisoners, emergency workers;
   e. Long mobilization time--certain industries, farms.

   As transit time for sheltering approaches that for evacuation, the relative attractiveness of sheltering decreases.

Figure B1-5

Sheltering Dose Reduction Factor

Air Change Rate, hr^{-1}	Whole Body		Thyroid
	Small Structure	Large Structure	Small Structure or Large Structure
L = 0.125[a]	0.33-0.40	0.08	0.015-0.07 (0.0015-0.007)[b]
L = 1.0[c]	0.43	0.11-0.17	0.1-0.28 (0.01-0.028)[b]

[a] Applicable to relatively "airtight" structures such as well sealed residences, interior rooms with no windows, and doors chinked, or large structures with ventilation shut off.

[b] Expedient filtration over mouth and nose breathing area, using such common items as towels (three or more folded layers), crumpled handkerchiefs (or one with eight or more folded layers), toilet paper or facial tissue (three or more folded layers). These values assume a factor of 10 filtration improvement when such expedient means are employed. This, however, is an assumption made here based on experimental work involving respirator protection against particulate aerosols in the size range of 1 to 5 μm (Guyton, H. G., H. M. Decker and G. T. Anton, "Emergency Protection Against Radiological and Biological Aerosols," AMA Archives of Industrial Health 20: 91-95, August 1959) and field release tests of elemental iodine, I_2-131 (Hawley, C. A., Jr., et al., "Controlled Environmental Radioiodine Tests at the National Reactor Testing Station, 1965 Progress Report," IDO-12047, February 1966), that indicated a rapid transformation in source spectrum closely resembling the normal-size distribution in the atmosphere.

[c] Normal or representative value for structures with no special preparation except for closing of doors and windows.

4. The longer the projected duration of exposure, the less attractive sheltering becomes, particularly for small structure sheltering. For inhalation protection, if the passage of the radioactive cloud is projected to exceed 3 hours, evacuation is usually preferable to small structure sheltering; large structure sheltering may be competitive with evacuation for longer periods; however, after about 6 hours, evacuation is nearly always preferable except for extremely low air change rates.

5. If the cloud is expected to arrive during mobilization for evacuation, shelter first, then evaluate desirability of subsequent evacuation.

6. The use of large structures as collection points during evacuation mobilization will provide greater protection than small structures, e.g., this type of mobilization may apply to shopping centers and commercial areas.

7. The choice of protective action strongly depends on whether a major release of radioiodines occurs. Thyroid dose from inhalation of iodines will be controlling for a core-melt accident if engineered safeguards have not succeeded in largely removing them. If so,

   a. Children need more protection than adults,
   b. Ventilation control is essential for effective sheltering,
   c. Expedient filtering will be of significant help,
   d. If evacuation is indicated following plume passage, people should exit shelters and leave the area as soon as possible after cloud passage.

8. If, on the other hand, whole body dose is controlling, shelter size is the most important consideration; ventilation control and expedient filtering are somehwat less important.

   The main factors in sheltering against whole body exposure are:

   a. Size and wall thickness,
   b. Number of stories or overhead projection,
   c. Central location within the structure,
   d. Many small rooms rather than a single or a few large open spaces.

9. Sheltering may be relatively more attractive during weekday hours when many people are already in such large structures as schools, factories, stores, etc. During evening and weekend hours, the transit time and disruption factors may be similar for sheltering and evacuation.

10. A general guide to the decision factors associated with evacuation and shelter is found in the chart entitled "Evacuate or Shelter", (Figure B1-6). The chart is not intended to make automatic decisions, but rather as a useful tool in protective action decision-making.

D. GROUND DEPOSITION ACTIONS

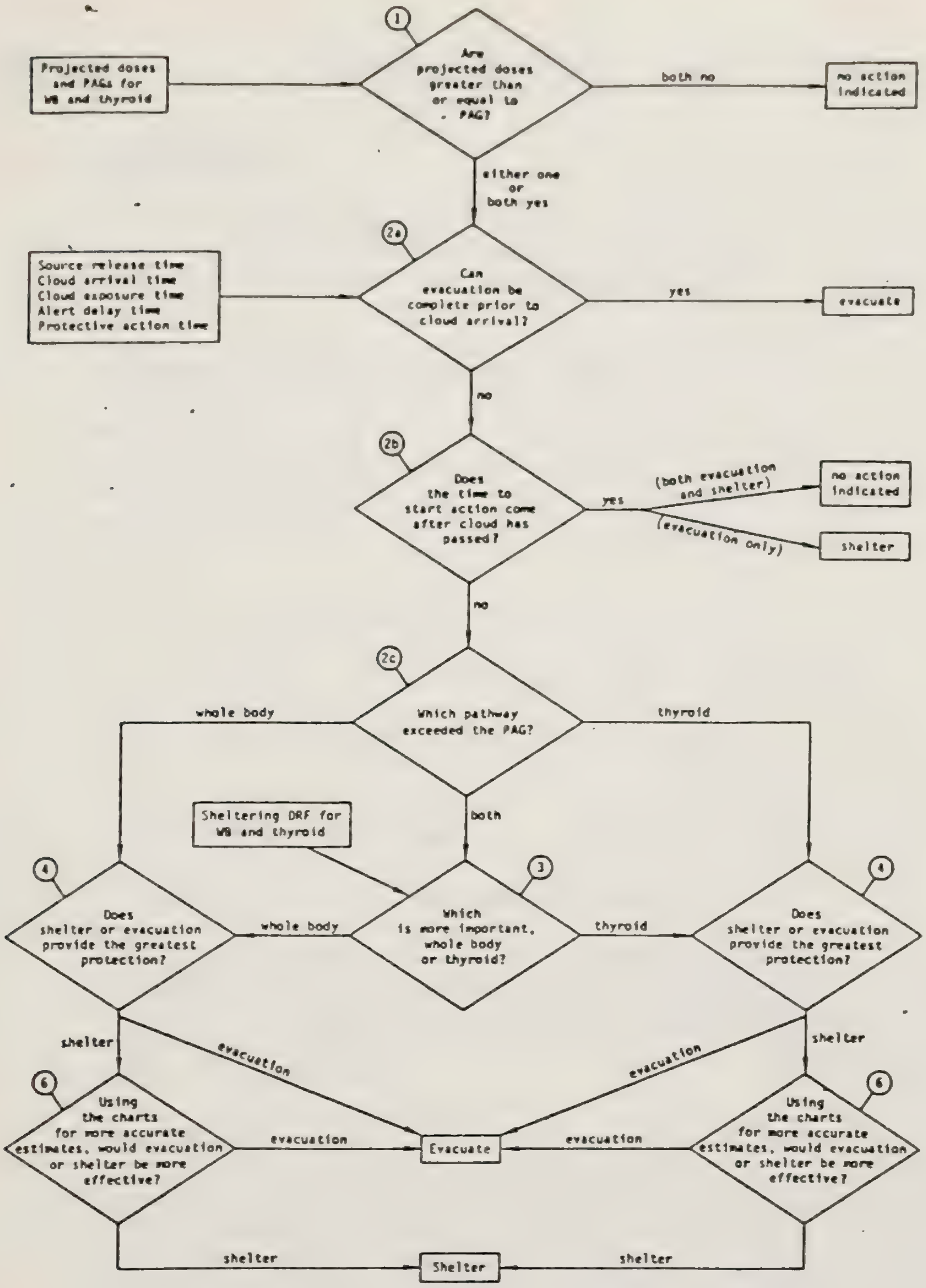
Radioactive materials from a passing plume can be deposited on the ground, contaminating the ground itself, or property and equipment. Here, we are dealing with a change in background radiation levels. Exposure pathways may include inhalation, ingestion and external whole body exposure.

In general, inhalation and whole body exposure rates will be a good deal lower for exposure to deposited materials than for exposure to airborne radionuclides, but the exposure rate may persist much longer.

Recommended protective actions for deposited materials are: 1) decontamination of land areas, property, and equipment; and, 2) temporary relocation of affected populations.

Decontamination procedures for land, property and equipment are described in Section B-5 "Recovery and Reentry". Community relocation is a protective action similar in intent to evacuation. However, because deposition exposure rates are generally much lower than airborne rates, relocation of affected population would ordinarily not be carried out until field monitoring surveys confirmed higher than normal background radiation which would warrant such action.

Should ground deposition levels outside the ten-mile plume exposure Emergency Planning Zone (EPZ) require community relocation, such action would be carried out in accordance with the provisions of Annex B to the Massachusetts Comprehensive Emergency Response Plan, "Evacuation and Transportation".


1
Projected doses and PAGs for WB and thyroid
Are projected doses greater than or equal to PAG?
both no
no action indicated
either one or both yes
2a
Source release time
Cloud arrival time
Cloud exposure time
Alert delay time
Protective action time
Can evacuation be complete prior to cloud arrival?
yes
evacuate
no
2b
Does the time to start action come after cloud has passed?
yes
(both evacuation and shelter)
no action indicated
(evacuation only)
shelter
no
2c
Which pathway exceeded the PAG?
whole body
thyroid
both
Sheltering DRF for WB and thyroid
3
Which is more important, whole body or thyroid?
whole body
thyroid
4
Does shelter or evacuation provide the greatest protection?
4
Does shelter or evacuation provide the greatest protection?
shelter
evacuation
evacuation
shelter
6
Using the charts for more accurate estimates, would evacuation or shelter be more effective?
6
Using the charts for more accurate estimates, would evacuation or shelter be more effective?
evacuation
Evacuate
evacuation
shelter
Shelter
shelter

Evacuate or shelter?

Figure B1-6

ANNEX 2 PROTECTIVE RESPONSE -- INGESTION PATHWAY

A. INTRODUCTION

This Annex describes protective actions associated with the ingestion pathway of radiation to people, and the responsibilities and procedures associated with implementation of such actions.

B. NATURE OF INGESTION EXPOSURE PROTECTIVE ACTIONS

Radiation exposure through the food chain will be the result of consumption of contaminated foodstuffs and water. It may commence shortly after the passage of airborne radioactive materials, and may continue for a long or short time depending upon the radionuclides involved.

Control of this pathway of exposure involves:

(1) Control of access to contaminated animal feeds;

(2) decontamination of certain foodstuffs;

(3) diversion and storage to allow decay of short half-life radionuclides; and,

(4) destruction of contaminated foods.

The decision on what protective measures to take will be made by the Department of Public Health based Protective Action Guides described in Section A, upon recommendations issued by the National Advisory Committee on Radiation, and upon the circumstances of a particular accident.

Attachment B2-1, extracted from the Food and Drug Administration's publication "Supporting Documentation for Proposed Response Recommendations in Case of the Accidental Radiation Contamination of Food and Animal Feeds", summarizes National Advisory Council on Radiation recommendations relative to the ingestion pathway. Tables D-1 and D-2 of the Attachment summarize the effectiveness of various actions.

C. PLANNING BASIS

1. Statewide applicability of Ingestion Pathway Emergency Planning Zone

Because all of Massachusetts is within 50 miles of at least one present or proposed nuclear power station, implementation of ingestion pathway protective actions will be primarily the responsibility of State agencies, supported where necessary by local authorities in affected communities.

2. Dairy Cattle

In Massachusetts, contamination of dairy feed is not likely to be a significant problem. Currently, 75-80% of all feed is stored. Most silos are filled for the year, and emptied daily according to need. Horizontal silos, using plastic and other covering materials, are becoming the dominant method of feed storage.

3. Water

There are very few small, uncovered holding reservoirs of the kind that could be threatened by deposition from gaseous releases, and of those that do exist, operating authorities in most cases have been ordered by the Massachusetts Department of Environmental Quality Engineering to cover the reservoirs to reduce biological contamination. Ample authority and resources exist to test and restrict water supplies where necessary.

4. Produce

Agriculture is not intensively practiced in Massachusetts. Farms in communities within ten miles of each power station have been inventoried. Information on growers and producers in the balance of the State is available through the Massachusetts Department of Food and Agriculture. USDA State and County Emergency Boards, and Extension Service County Agents are an additional resource in this area.

D. AUTHORITIES

1. Massachusetts General Laws, Chapter 128, and Chapter 94, Sections 16-16k authorize the Department of Public Health to take various actions including the embargo of food when the public health is threatened.

2. Massachusetts General Laws, Chapter 134, Section 74A authorizes implementation of certain regulatory and emergency measures by the Department of Food and Agriculture in cooperation with the Department of Public Health.

3. Massachusetts General Laws, Chapter 94, Section 16 provides for certification of dairies, sampling of milk, and interdiction of unhealthful milk.

4. Comprehensive drinking water regulations were promulgated in Massachusetts pursuant to: Massachusetts General Laws, Chapter 21A, Section 2(28); Chapter 92, Section 17; and Chapter 111, Section 160.

E. RESPONSIBILITIES

1. Massachusetts Department of Public Health (DPH)

DPH is responsible for establishing ingestion pathway Protective Action Guides, determining, based upon release rates, source term and meteorological conditions those areas likely to be affected; assisting in coordination of food and water sampling, and determining appropriate protective actions.

2. Massachusetts Civil Defense Agency (MCDA)

MCDA is responsible for coordinating radiation monitoring resources to assist in field monitoring of milk, water and produce; and for coordinating the provision of logistical support for sample collection and delivery to laboratories.

3. Massachusetts Department of Environmental Quality Engineering (DEQE)

DEQE exercises primary responsibility for water quality in the Commonwealth, and, in this context, is responsible for collecting potable water samples at request of the Department of Public Health (DPH), analyzing them for radiation content, and, upon the advice of DPH, for restricting the use of public drinking water supplies.

DEQE, through its Lawrence experiment station, is also responsible for analysis of other environmental samples for radionuclide content, and transmission of the results to DPH. DEQE will determine alternate laboratory resources to accomplish this task where necessary.

4. The Massachusetts Department of Food and Agriculture is responsible for collection of samples, under the direction of DPH, of foodstuffs and milk (Division of Dairying and Animal Husbandry) and the delivery of these samples for analysis.

5. The Massachusetts Department of Fisheries, Wildlife and Recreational Vehicles, Division of Marine Fisheries is responsible for shellfish sample collection, under the direction of DPH, and delivery of samples to the Lawrence experimental station or to alternative laboratories.

F. PROCEDURES

Procedures for environmental sample collection and analysis will be consistent with Department of Public Health and Department of Environmental Quality Engineering standing operating procedures for accomplishing this mission on a non-emergency basis.

These procedures, and those utilized for field assessment of water, milk, feed, and produce, will be consistent with those reflected in Attachment B2-2, extracted from Department of Public Health guidance referenced above.

APPENDIX D
POTENTIAL ACTIONS

The National Advisory Committee on Radiation (National Advisory Committee on Radiation, 1962) has made the following recommendation that applies to action taken to reduce potential exposure following the accidental release of radioactivity:

"A countermeasure, useful to public health, must fulfill a number of requirements. First, it must be effective; that is, it must substantially reduce population exposures below those which would prevail if the counter measure were not used. Second, it must be safe; i.e., the health risks associated with its use must be considerably less than those of the contaminant at the level at which the countermeasure is applied. Third, it must be practical. The logistics of its application must be well worked out; its costs must be reasonable; and all legal problems associated with its use must be resolved. Next, responsibility and authority for its application must be well identified. There must be no indecision due to jurisdictional and misunderstandings between health and other agencies concerned with radiation control. Finally, careful attention must be given to such additional considerations as its impact on the public, industry, agriculture, and government."

An action, in order to be useful must be effective, safe and practical. An action may be applied at the source in an attempt to control the release of radioactivity from the source; or, the action may be applied at the beginning of the food chain (soil, vegetation, or cattle), to the immediate vector prior to ingestion by man (milk or food), or to the population itself. For the most part these recommendations suggests protective actions to milk, human and animal foods, or soil. Thus, this appendix is limited to actions concerning these media. Further recommendations by NACOR (National Advisory Committee on Radiation 1962) extends the discussion of protective measures to public health actions directly affecting the exposed population. For details of agriculture actions, several Department of Agriculture reports are available which deal with specific actions for crops and soil (Park, 1965, Todd, 1963, Menzel, and James 1971).

Potential actions relative to the pasture-milk-man pathway are summarized in table D-1. For this pathway, only four countermeasures are rated as effective, safe, and practical (a somewhat arbitrary scale of judgment was used). Of the four, one has distinctive disadvantages. Although removal of radionuclides from milk has been shown to be practical no facilities for doing this exist. Another, diverting fresh milk to processed milk products, freezing and/or storage, is effective only for short-lived radionuclides. Thus, changing dairy cattle to an alternate source of uncontaminated feed and condemnation of milk are the only two protective actions rated good for effectiveness, safety, and practicality.

Of course the other countermeasures should also be considered, but they appear less promising.

Actions for fruits and vegetables are presented in table D-2. Note that studies in which these products were contaminated under actual conditions with fallout (Studies 2 and 3) yielded a lower reduction in the radioactivity removed during preparation than was the case in an investigation (Study 1) in which radionuclides were sprayed on the food. Depending on the food, reductions between 20 and 60 percent in strontium-90 contaminations are possible by ordinary home preparation or by food canning processes.

Milled grains contain only a small portion of the total radioactive contamination of the whole grain; removal of bran from wheat and polishing of rice are effective methods of reducing contaminating fallout (table D-3), (Todd 1963).

Although these recommendations are intended for implementation within hours or days after an emergency, long-term actions applicable to soil are shown for information purposes only in table D-4. Alternatives to decontamination and soil management should be considered, especially if the radioactive material is wide spread, because great effort is required for effective treatment of contaminated land.

The concept of Protective Action assumes that the actions implemented will continue for a sufficient period of time to avoid most of the projected dose. The concentration of radioactivity in a given food will decrease due to radioactive decay and weathering as a function of time after the incident. Thus, as discussed in Appendix A, actions which have a positivie cost-benefit ratio at the time of initial contamination or maximum concentration may not have a positive cost-benefit ratio at later times. Therefore, dependent on the particular food and food pathway, it may be appropriate to implement a series of protective actions until the concentrations in the food have essentially reached background levels.

As an example of the implementation of protective actions, consider the case where an incident contaminates the pasture-cow-milk-man pathway with a projected dose of 2-3 times the EMERGENCY PAG due to iodine-131. In such a situation these protective actions may be considered appropriate:

1. Immediately remove cows from pasture and place them on stored feed in order to prevent as much iodine-131 as is possible from entering the milk.

2. Condemn any milk which exceeds the EMERGENCY PAG response at the farm or milk plant receiving station.

3. divert milk contaminated at levels below the EMERGENCY PAG to milk products; and

4. Since the supply of stored feed may be limited and the costs of this protective action greater than diversion to milk products, the use of stored feed may be the first action to cease; this should not be done, however, until the concentration of iodine-131 due to the use

of pasture has dropped below the EMERGENCY PAG and preferably is approaching the PREVENTIVE PAG.

5. The diversion of fresh milk to milk products must continue until most of the projected dose has been avoided; this action might be ceased when the cost-effectiveness point is reached or the concentration of iodine-131 approaches the background levels.

This discussion assumes that there is an adequate supply of whole milk from noncontaminated sources, that there is an available manufacturing capacity to handle the diverted milk, and that the iodine-131 is the only radionuclide involved. In an actual situation these conditions may not be present and other factors may affect the practicality of proposed protective actions. The agency responsible for emergency action must identify and evaluate those factors which affect the practicality of protective action, and thus develop a response plan (with tentative protective action) which are responsive to local conditions and capabilities.

REFERENCES

Laug, E.P., Temporal and Geographical Distributions of Strontium-90 and Cesium-137 in Food, Radiological Health Data, Vol. 4, No. 9, pp. 453, September 1963.

Menzel, R.G. and P.E. James. Treatment for Farmland Contaminated with Radioactive Material, Department of Agriculture, Washington, D.C., June 1971.

National Advisory Committee on Radiation, A Report to the Surgeon General, Radioactive Contamination of the Environment: Public Health Action, U.S. Dept. HEW, PHS, Washington, D.C., May 1962.

National Canners Association, Final Progress Report: Investigation on the Removal of Radioactive Fallout from Vegetables and Fruits During Processing by Normal and by New or Modified Processing Operations. Agriculture Research Service Contract 12-14 100-7187 (74) May 1960.

Park, A.B., Statement before the JCAE, Hearing on the Federal Radiation Council Protective Action Guides, pp. 4-83, Washington, D.C., June 1965.

Thompson, J.C. Jr., ^{90}Sr Removal in Vegetables Prepared for Home Consumption, Health Physics, Vol. 11, No. 2, pp. 136, February 1965.

Todd, F.A., Protecting Foods and Water, in "Protection of the Public in the Event of Radiation Accidents," World Health Organization, Geneva 1963.

Table D-1. Actions applicable to the pasture-milk-man pathway (Compiled from data from Park 1965, and Henzel and James 1971)

Action	Radionuclide(s) for which protective action is applicable	Effectiveness	Safety	Practicality (effort required)	
Applicable to Cattle					
a) Provide alternate source of uncontaminated animal feed	^{131}I, ^{90}Sr, ^{89}Sr, ^{137}Cs	(+)[a]	(+)	(+)	Good
b) Add stable iodine to cattle ration	^{131}I	marginal[b]	some hazard	(+)	
c) Add stable calcium to cattle ration	^{89}Sr, ^{90}Sr	marginal	some hazard	(+)	
d) Add binders to cattle ration	^{137}Cs, ^{89}Sr, ^{90}Sr	marginal	questionable	(+)	
e) Substitute sources of uncontaminated water	^{137}Cs, ^{89}Sr, ^{90}Sr	(+)	(+)	(+)[c]	
Applicable to Milk					
a) Condemnation of milk	^{131}I, ^{89}Sr, ^{90}Sr, ^{137}Cs	(+)	(+)	(+)[d]	Good
b) Divert fresh milk to processed milk products	^{131}I, ^{89}Sr,	(+)	(+)	(+)	Good
c) Process fresh - store	^{90}Sr, ^{137}Cs	marginal	questionable	(+)	
d) Process fresh - store	^{131}I	(+)	(+)	(+)	Good
e) Remove radionuclides from milk	^{131}I, ^{89}Sr, ^{90}Sr, ^{137}Cs	(+)	(+)	(+)[e]	Good

[a] (+): 90% effective

[b] Marginal: less than 90% effective

[c] Depends on availability

[d] Somewhat dependent on volume

[e] No processing plant presently available

Table D-2. Percent reduction in radioactivity due to surface Contamination of fruits and vegetables

	Normal Food Preparation for Freezing, Canning or Dehydration (1)				Study (2)	Study (3)
	External Contamination*		Internal Contamination*		Canning	Home Preparation
	^{90}Sr	^{137}Cs	^{90}Sr	^{137}Cs	^{90}Sr	^{90}Sr
Spinach	92	95	64	88	22	-
Snap Beans	-	-	-	-	62	-
Carrots	-	-	-	-	19	19
Tomatoes	-	-	65	-	21	28
Broccoli	94	92	72	89	-	-
Peaches	~ 100	~ 100	~ 100	~ 100	50	-
Onions	-	-	-	-	-	37
Potatoes	-	-	-	-	-	24
Cabbage	-	-	-	-	-	55
Green Beans	-	-	-	-	-	36

*Contamination on surface is referred to as external contamination. Internal contamination is contamination of fleshy portion of product from surface deposition of radionuclide.

References: (1) National Canners Association, Progress Report for the Agricultural Research Service, U.S.D.A. (Research and Service Contract 12-14, 100-7187 (4), 1968.

(2) Laug, E.P., Radiological Health Data, Vol. 4, No. 9, pp. 448, September 1963.

(3) Thompson, J.D., Jr., Health Physics, Vol. 11, No. 2, pp. 136, February 1965.

Table D-3. Distribution of strontium-90
(Compiled from data by Todd 1963)

	Wheat			Rice	
	Berry	Bran	Flour	Whole Grain	Milled
Average Conc. uuCi kg^{-1}	22	68	4.4	4.9	0.7

Table D-4. Actions applicable to soil (compiled from data from Park 1965, and Menzel and James 1971)

Protective Action	Radionuclide(s) for which protective action is applicable	Effectiveness[a]	Safety	Practicality (effort required)[b]
Applicable to Soil				
a) Soil management--minimum tillage:	^{90}Sr	poor to fair	not applicable	good
deep plowing with root inhibition	^{90}Sr	good to fair	"	poor
irrigation & leaching	^{90}Sr	poor	"	good
liming & fertilizing	^{90}Sr	poor to fair	"	good
b) Removing contaminated surface crops	^{90}Sr	most poor	"	poor to fair
c) Removal of soil surface contamination:				
warm weather with vegetation cover	^{90}Sr	good to fair	"	poor
cold weather no cover	^{90}Sr	good to poor	"	good to poor

[a] Rating for reducing strontium90

Good - 95% reduction
Fair - 75-95% reduction
Poor - 75% reduction

[b] Rating for effort required

Good - not significantly more than normal field practice
Fair - extra equipment or labor required
Poor - very great requirement of equipment, materials, and labor

Table B-4. Average consumption for the general population

Food	Average consumption for the general population g/day	% of total diet
Milk, cream, cheese, ice cream*	567.5	27.2
Fats, oils	54.5	2.6
Flour, cereal	90.8	4.3
Bakery products	149.8	7.2
Meat	217.9	10.4
Poultry	54.5	2.6
Fish and shellfish	22.7	1.1
Eggs	54.5	2.6
Sugar, sirups, honey, molasses, etc.	72.6	3.5
Potatoes, sweet potatoes	104.4	5.0
Vegetables (excluding potatoes) fresh	145.3	7.0
" canned, frozen, dried	77.2	3.7
" juice (single strength)	9.1	0.4
Fruit, fresh	163.4	7.8
" canned, frozen, dried	36.3	1.7
" juice (single strength)	45.4	2.2
Other beverages (soft drinks, coffee, alcoholic beverages)	177.1	8.5
Soup and gravies (mostly condensed)	36.3	1.7
Nuts and peanut butter	9.1	0.4
TOTAL	2088.1	99.9

*Expressed as calcium equivalent; that is, the quantity of whole fluid milk to which dairy products are equivalent in calcium content.

APPENDIX C
METHODS OF ANALYSES

I. DETERMINATIONS OF RADIONUCLIDE CONCENTRATIONS BY SENSITIVE LABORATORY METHODS.

A. Many compendia of methods of analysis are available. The reference work recommended here is noted for its up-to-date methodologies which continuously undergo revision and improvement. This manual is: HASL Procedure Manual, edited by John H. Harley, HASL 300, ERDA Health and Safety Laboratory, New York, N.Y. 1973.

B. Analysis need not be limited to above reference but should provide limits of detection as listed below:

Radionuclide	Limit of Detection* pCi/liter or kg
^{131}I	10
^{137}Cs	10
^{90}Sr	1
^{89}Sr	5

*Concentration detectable with a precision of ± 100 percent at the 95 percent confidence level.

C. A source of more rapid methods of analysis of radionuclides in milk, applicable to these recommendations is: Rapid Methods for Estimating Fission Product Concentrations in Milk, B. Kahn et al., Public Health Service Publication 999-R-2, HEW, Washington, D.C. (1963).

1. The methods for gamma radionuclide analysis (applicable to ^{131}I and ^{137}Cs presented in this reference are also applicable to pasture.

2. The gamma scan determinations of ^{131}I and ^{137}Cs in milk (or water) can generally be accomplished within 2 or 3 hours. For samples measuring in the 0-100 pCi/liter range, the error at the 95 percent confidence level (2 sigma) is 5 to 10 pCi/liter. For samples measuring greater than 100 pCi/liter the error is 5 to 10 percent.

3. Radiostrontium procedures permit analyses of several samples simultaneously in 5 hours of laboratory bench time if laboratory is set up for routine analysis of these radionuclides; recovery in tracer studies is 80 ± 5 percent.

D. An ion exchange field method for determination of I^{131} in milk which uses gamma spectroscopy after sample collection has also been described (Evaluation of Ion Exchange Cartridges for Field Sampling of Iodine-131 in Milk, R.H. Johnson and T.C. Reavey, Nature 208:750-752, 1965). The main advantage of this method is that it permits a large number of samples to be shipped and analyzed in a central laboratory.

E. For analysis of samples other than milk the HASL reference cited above is recommended.

II. DETERMINATIONS OF RADIONUCLIDE CONCENTRATIONS BY FIELD METHODS

A. Ground Contamination (Beta Radiation): The following methodology appears in Evaluation of Radiation Emergencies and Accident, Technical Report Series No. 152 (International Atomic Energy Agency, 1974).

The conversion of ground survey readings to contamination levels can be accomplished by using the following equations and factors (assuming a metal tube wall thickness (steel) of 30 mg/cm^2):

1. Use a G-M survey meter calibrated to yield 3,000 counts/min per 1 mR/h of Ra γ.

2. Hold the probe not more than 5 cm above the ground with the beta shield open.

3. Assure that 100 counts/min can be detected above a normal 50 to 100 counts/min background.

4. Take readings in open terrain which is not in close proximity to heavy vegetation, cover or buildings.

$D = R \times F$

where D = ground deposition (in $\mu Ci/m^2$)

R = G-M reading (in units of 10^2 counts/min) (background corrected)

F = factor given in table C-1

$C = (D \times f)\ d$

where C = concentration (in $\mu Ci/kg$)

D = ground deposition (in $\mu Ci/m^2$)

f = fraction of deposited nuclide in the vegetation

d = density of vegetation cover (in kg/m^2)

f ranges from 0.1 to 1 and is usually taken to be 0.25 for ^{131}I in the United Kingdom, and 0.5 in the United States.

Data of a similar nature may also be found in "Emergency Radiological Plans and Procedures," K.R. Heid (Ed.) in the Chapter (Item 04.3.4) on "Conversion of Survey Meters to Concentration, by J.K. Soldat.

B. Herbage: A field method for estimation radionuclide contamination at the response levels equivalent to the EMERGENCY PAG for pasture which has been suggested (International Atomic Energy Agency, 1974) is as follows:

1. Obtain enough vegetation to fill a 30 cm x 40 cm plastic bag approximately half full. This is about 1/3 of a kilogram (Note: the vegetation cover should be obtained from at least 1 m^2 of ground. The vegetation should be cut at approximately 1 to 2 cm from the ground and should not be contaminated in the process by soil).

2. Note the area represented by this quantity of material.

3. Compress the air from the bag and seal.

4. Transfer the sample to a low background area.

5. Flatten bag and lay probe of a portable G-M survey meter on the center of the bag.

6. Wrap bag around probe and note reading (window open and background corrected).

7. Calculate the contamination from the following equation:

$C = R/k$

where C = vegetation concentration (in μCi/kg)

R = G-M reading (in units of 10^2 counts/min) (background corrected)

k = 10^2 counts/min per μCi/kg as given in table C-2

8. Convert μCi/kg to μCi m^{-2} on the basis of the area represented by the sample.

9. The limiting radionuclide (i.e., having the lowest recommendation relative to its deposition on pasture) is iodine-131. According to the table above this radionuclide is detected with the lowest efficiency. Thus, if the operator assumes this radionuclide to be exclusively present in the pasture the most

conservative estimates relative to the EMERGENCY PAG would be reached.

C. Milk: The experimental data for field determination of radionuclides in milk are limited to determination of iodine-131, and the details are rather sketchy. What material is available is abstracted below.

1. Although no data is available for field determination of radionuclides other than iodine-131 in milk, table C-3 (International Atomic Energy Agency, 1974) presents experimental information obtained in water. (Also see International Atomic Energy Agency, 1966). To an extent milk is more self-shielding than water, the following data is presented as a guide rather than a means of analysis.

2. Method of Kearney C.H., (as detailed in letter of Sept. 25, 1974 from J.A. Auxier to H. Lee).

a) Instrument: CDV-700 Model No. 6B with beta window closed at all times.

b) Geometry: See figure C-1.

c) The count rate is determined by ear. If the counts per minute recorded by ear are more than 60 to 70 cpm, then the milk should be diluted with "pure" water so as to produce a sample having a 50%-50%, 25%-75% or other concentration low enough to produce counts per minute somewhat less than 60 to 70 cpm.

d) Background: The experimental conditions duplicated "sky shine" from a trans-Pacific transfer of fallout. If the exposure around the test hole was 0.75 mR/hr a couple of feet above the hole, the sky shine increased cpm recorded by the probe shielded within the test hole by 3 cpm. Background, on the average was measured (in "pure" water) to be 12 to 15 cpm (in an uncontaminated environment). Thus, total background counts (with sky shine) is on the average around 19 cpm.

e) From figure C-2, the net counts per minute equivalent to the response level for the EMERGENCY PAG applicable for milk (infant as critical segment of population) is approximately 20.

3. Method of C. Distenfeld and J. Klemish (to be published)

a) Instruments:

i) CDV 700 instrument turned to times 10 scale and calibration adjustment turned to require the meter to indicate 2 mR/hr. (NB: Discrepencies were noted between data from scale and pulse counting with an oscilloscope).

ii) Modified CDV 700 M with factory calibration. Good agreement between scale reading and electronic check.

b) Geometry: The basic container was a 5 gallon heavy wall polyethylene "Jerri" type measuring 12x9x10 inches. A 2" O.D. blind tube was installed at approximately 15' to allow the G-M probe to sample the center of the container.

c) Counts were taken inside and at the top (external) to the container.

d) Background was determined in a water filled plastic container (15x25x20 cm) about seven meters from the sample vessel.

e) Calibration results are presented in figures C-3 and C-4 (note that scale is log-log).

f) Net counts per minute equivalent to the response levels for the EMERGENCY PAG for milk are summarized in table C-4

4. The International Atomic Energy Agency reports on a series of experiments (International Atomic Energy Agency, 1966). The data is duplicated in table C-5.

5. The relative sensitivity of the various techniques is summarized in table C-6.

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Auxier, J.A., Director, Health Physics Division, Oak Ridge National Laboratories, Personal Communication to H. Lee, Stanford Research Institute, Sept. 25, 1974.

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Kahn, B. and C.K. Murthy, C. Porter, G.R. Hagel, G.J. Karches and A.S. Goldin, Rapid Methods for Estimating Fission Product Concentrations in Milk, USDHEW, Public Health Service Publication No. 999-R-2 (1963).

Kearney, C.H., Trans-Pacific Fallout and Protective Countermeasures, Oak Ridge National Laboratories, ORNL-4900 (1973).

ANNEX 3 RADIOLOGICAL EXPOSURE CONTROL

A. INTRODUCTION

The purpose of this Annex is to establish responsibilities and describe existing systems and procedures for controlling radiological exposure of emergency response personnel and of the general public affected by a radiological incident.

B. RESPONSIBILITIES

1. Massachusetts Civil Defense Agency(MCDA)

MCDA responsibilities include:

a. Provision of planning guidance and training to cities and towns on radiation exposure control, radiation exposure record maintenance, and radiological decontamination.

b. Provision and maintenance of radiation monitoring equipment through the MCDA Maintenance and Calibration Facility.

2. Department of Public Health

The Commissioner of Public Health is responsible for determining, based upon the nature and magnitude of the emergency, any Federal guidance that may be issued, and other pertinent variables the release criteria to be utilized for exposed or contaminated personnel.

3. Local Governments

Local governments are responsible for the development of effective local plans for radiological exposure control, for assuring that an adequate staff of radiological defense officers and radiological monitors is trained for peacetime radiological emergency, and for maintaining civil defense monitoring equipment placed in the care of the local government.

C. CONCEPTS

1. Protective Action Guides

The Massachusetts Department of Public Health has adopted United States Environmental Protection Agency(EPA) guidance on Protective Action Guides(PAGs) for exposure to airborne radioactive materials. These are summarized in Tables B.3-1 and B.3-2. (Protective Action Guides are described in Section A of this plan.)

For the purposes of this plan the EPA PAG for whole body gamma dose was revised from a single value of 25 REM to a range of 5 to 25 REM. The rationale for this change is that 5 REM is both the lower whole body dose limit which can cause cellular effects detectable by chromosome or other special analyses; and the lower dose limit which might produce acute effects.

Unlike other PAGs, those established for emergency workers imply a limit for accumulated dose before an action is taken (usually replacement by other personnel). The PAG range should permit some latitude on the part of officials implementing the PAG, based upon such considerations as availability of relief personnel and criticality of mission.

TABLE B.3-1

Protective Action Guides for Whole Body Exposure to Airborne Radioactive Materials

Population at Risk	Projected Whole Body Gamma Dose (REM)
Nonessential Personnel	1 to 5(A)
Emergency Workers	5 to 25(A)
Lifesaving Activities	75

(A) When ranges are shown, the lowest value should be used if there are no major local constraints in providing protection at that level, especially to sensitive populations. Local constraints may make lower values impractical to use, but in no case should the higher value be exceeded in determining the need for protective action.

TABLE B.3-2

Protective Action Guides for Thyroid Dose
Due to Inhalation from a Passing Plume

Population at Risk	Projected Thyroid Dose REM
Nonessential Personnel	5-25
Emergency Workers	125
Lifesaving Activities	(A)

(A) No specific upper limit is given for thyroid exposure since in the extreme case complete thyroid loss might be an acceptable penalty for a life saved. However, this should not be necessary if respirators and/or thyroid protection for rescue peraonnel are available as the result of adequate planning.

2. Dosimetry

A program to stockpile both high and low range pocket dosimeters in communities within ten miles of each nuclear power station was underway when the plan was promulgated, and will be completed in January, 1980. Dosimetry equipment is also being stockpiled at key State Police Barracks for distribution to State Police, State Department of Public Works, and other emergency workers. Appropriate training in charging and using the equipment is assured. (See Sections C, D and E.)

3. Local Plans

Based upon State guidance, each locality within ten miles of a nuclear power station has included in their local plan provisions for distribution of dosimetry equipment and primary utilization of local radiation monitoring equipment and personnel for radiologcal exposure control of emergency workers. Each reception community has made provisions for radiological monitoring of evacuees, dose record maintenance of both emergency workers and the general public, and decontamination as required.

4. Personnel Contamination Levels

Pending the issuance of appropriate Federal guidance, the following guidelines have been adopted from the Connecticut Fixed Nuclear Facility Emergency Response Plan for use in determining if personnel skin or clothing require decontamination, and if release is appropriate.

The following levels will be considered acceptable:

a. Levels at or under 0.4 mrad/hr gross beta/gamma activity at 1 cm

OR

An average reading over the surface being scanned of 0.2 mrad/hr at 1 cm with a maximum of 1.0 mrad/hr at 1 cm of gross beta/gamma activity.

b. If levels persist at or under 3 mrad/hr of gross beta-gamma activity after at least two skin washings release conditionally (recheck next day).

A civil defense survey meter (CD V-700) with an open window is suitable equipment for this type of personnel monitoring.

D. PROCEDURES

Specific procedures for implementation of radiological control measures are incorporated into local plans (Sections C, D and E). The attachments listed below describe general procedures for radiation monitoring using the CD V-700, and for decontamination.

1. Attachment B.3-1 Personnel Radiation Monitoring Using CD V-700 (Adopted from Connecticut radiological emergency response plan).
2. Attachment B.3-2 Personnel Decontamination Guide.

ATTACHMENT B.3-1 PERSONNEL RADIATION MONITORING—CD V-700[1]

A. Purpose

To use the CDV-700 Survey Instrument to-

1) Scan personnel (emergency workers and evacuees) to determine if surface contamination (on skin, hair, body, clothing) with radioactivity is present.

2) Scan the thyroid of adults to determine if more detailed investigation of an inhaled dose from radioactive Iodine-131 is necessary.

B. References

1) Distenfeld, C.H., Brookhaven National Laboratory, unpublished report, Upton, N.Y., 1977.

2) Instruction and maintenance manual, radiological survey meter, OCDM No. CD-V-700, 1961.

3) State of Connecticut Emergency Operations Plan, Fixed Nuclear Facility Radiological Emergency Response Plan, pg. 106-3, and 106-4.

4) Ontario Hydro "A Survey of the Radiobiological, bioassay, and dosimetry of Radioiodines", Toronto, Ontario, 1974.

C. Precautions

1) Only properly trained personnel should use this procedure.

2) For surface contamination detection, the probe should be used with the window open.

3) For thyroid scanning, the probe should be used with window closed.

4) The thyroid scan should be done on adults only.

5) Insure background readings remain less than 100 cpm to maintain detector sensitivity.

6) To prevent contamination of the probe, users should wear plastic gloves, and the probe itself should be covered with plastic (bags, etc.).

---

[1] Adopted from Connecticut Radiological Emergency Response Plan.

D. Procedure

1) Preoperational check

a) Place the batteries (four "D" cells) in the battery compartments.

b) Plug in the earphone by screwing it into the earphone jack.

c) Remove the probe from handle and uncover the window by twisting the window section (center) of the probe (see Figure 1.

d) Turn the switch to the x10 position and place the window of the probe next to the operational check source located on the side of the meter box (see Figure 400.2-3-1).

e) Listen on the earphone for "clicks" and observe the deflections on the meter face.

f) If no response is noted, replace the four batteries and repeat steps (a) through (e).

g) Close the window of the probe.

2) Measurements

a) Turn the switch to the appropriate scale - x1, x10, x100 position and decrease until the meter reads on scale.

b) To determine the actual value with this instrument, multiply the selected switch position value by the observed reading. For example,

Reading	100 cpm
x Switch Position	x10
Actual Value	= 1000 cpm

c) The earphone can be used to provide increased accuracy at low levels of radiation.

To measure with it, place the switch in the x1 position, and count the number of "clicks", heard in the earphone, over a 60 second time interval. This total is counts per minute.

3) Evacuee Scanning

a) Background readings are taken in the work area where the evacuee's will be scanned. With the window of the probe closed, switch the instrument on, and record the reading taken on the x1 scale. Background radiation levels may change; therefore, readings should be retaken and recorded every 15 or 30 minutes. If background radiation levels exceed 110 cpm, the scanning work area will have to be moved or decontaminated.

b) Surface contamination readings should be taken with the "window open" and the switch in the x1 position. Hold the probe approximately 1/2 inch from the person's body so that the window faces him. Slowly, without touching the person, move the probe over the body. Readings of 200 counts per minute greater than background indicate contaminated areas which should be cleaned immediately.

   1) If the clothing skin or hair is contaminated, have the person report to the decontamination center.

   2) If the person's skin or hair is contaminated, take appropriate action to decontaminate to levels below 200 counts per minute above background. Follow the decontamination procedure.

c) Thyroid examination - should be done after it has been established that no external contamination is present. Place the probe with the "window closed", horizontally on the subjects neck between his Adam's apple and the top of the clavicle (collar bone) for approximately 5 seconds (see Figure 2). Record this reading.

The background reading is then subtracted from the observed thyroid reading to determine if any thyroid contamination exists.

If the evacuee's thyroid level is greater than 100 cpm above background, the person should be asked to return within the next 2 to 4 hours for additional monitoring until readings remain constant. The thyroid readings should level off about 10 hours after exposure to radioactive iodine-131.

E. Records

All readings and observations should be recorded on the "Personnel Dose History Record", Figure 3.

F. Responsibility

This procedure is to be used by appropriately trained town/city or state personnel at the evacuation/relocation centers and the field monitoring stations.

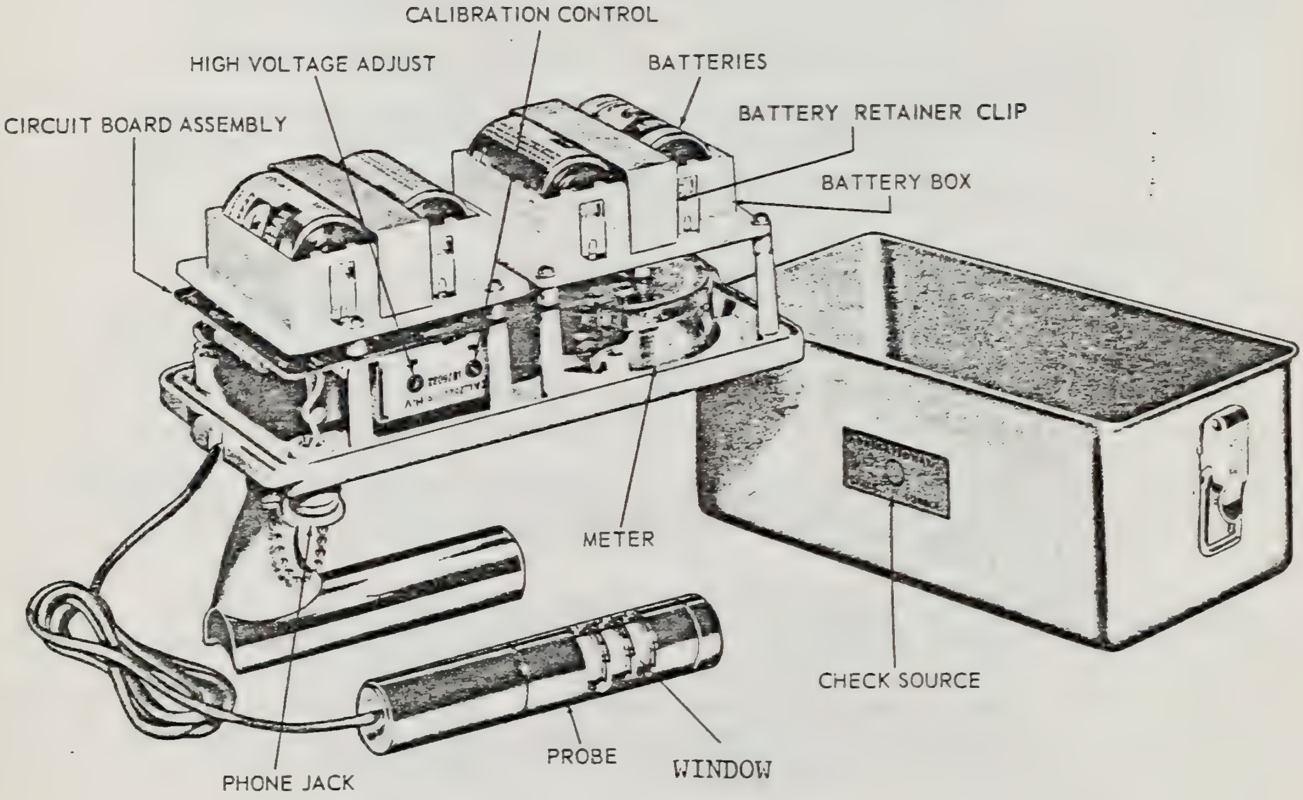


Figure 1. View of CD V-700, Model No. 6, showing Major Components

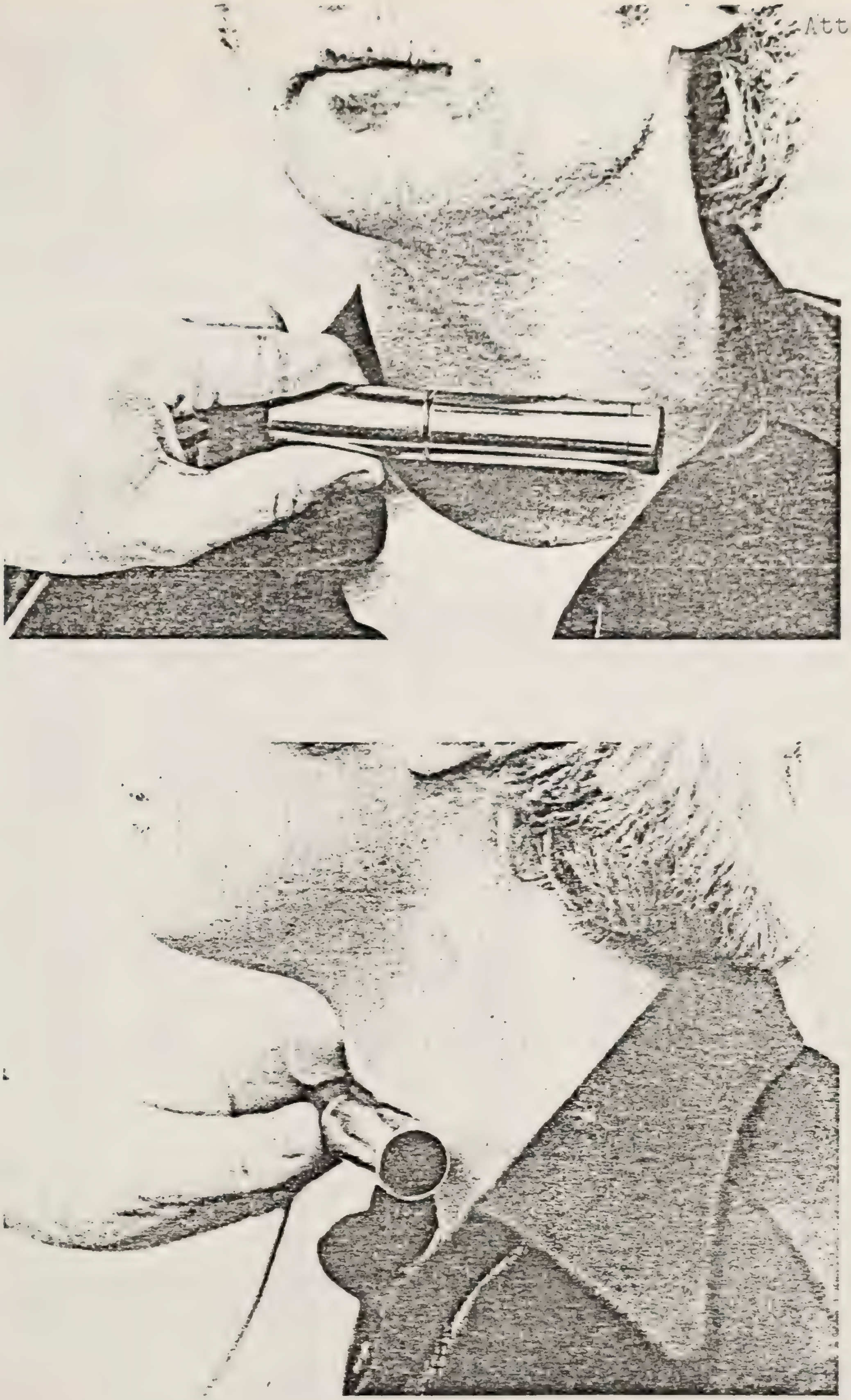


Figure 1. Front and side views showing correct placement of the probe to detect thyroid contamination

PERSONNEL DOSE HISTORY RECORD

PERSONAL DOSE HISTORY

Last Name			*First Name*		*Initial*
Home Address			*Visiting Address*		
City	*State*	*Zip*	*City*	*State*	*Zip*
Home Telephone No.			*Visiting Telephone No.*		

Comments:

Time-Day	*Radiation Levels (CPM)*			*Initials*
	Background	*Surface*	*Thyroid*	

1) *Was evacuee decontaminated* ☐ *No* ☐ *Yes*

2) *Was clothing contaminated* ☐ *No* ☐ *Yes*

3) *Thyroid dose received* ____________________

4) *Whole body dose received* ____________________

APPENDIX II

PERSONNEL DECONTAMINATION

Method*	Surface	Action	Technique	Advantages	Disadvantages
Soap and water	Skin and hands	Emulsifies and dissolves contaminate.	Wash 2-3 minutes and monitor. Do not wash more than 3-4 times.	Readily available and effective for most radioactive contamination.	Continued washing will defat the skin. Indiscriminate washing of other than affected parts may spread contamination.
Soap and water	Hair	Same as above.	Wash several times. If contamination is not lowered to acceptable levels, shave the head and apply skin decontamination methods.		
Lava soap, soft brush, and water	Skin and hands	Emulsifies, dissolves, and erodes. erode the skin. Apply	Use light pressure with heavy lather. Wash for 2 minutes, 3 times. Rinse and monitor. Use care not to scratch or lanolin or hand cream to prevent chapping.	Same as above.	Continued washing will abrade the skin.
Tide or other detergent (plain)	Same as above.	Same as above.	Make into a paste. Use with additional water with a mild scrubbing action. Use care not to erode the skin.	Slightly more effective than washing with soap.	Will defat and abrade skin and must be used with care.
Mixture of 50% Tide and 50% cornmeal	Skin and hands.	Emulsifies, dissolves, and erodes.	Make into a paste. Use with additional water with a mild scrubbing action. Use care not to erode the skin.	Slightly more effective than washing with soap.	Will defat and abrode sken and must be used with care.
5% water solution of a mixture of 30% Tide, 65% Calgon, 5% Carbose (carboxymethyl cellulose)	Same as above.	Same as above.	Use with water. Rub for a minute and rinse.	Same as above.	Same as above
A preparation of 8% Carbose, 3% Tide, 1% Versene, and 88% water homogenized into a cream.	Same as above.	Same as above.	Use with additional water. Rub for 1 minute and wipe off. Follow with lanolin or hand cream.	Same as above.	Same as above.

*Begin with the first listed method and then proceed step by step to the more severe methods, as necessary.

PERSONNEL DECONTAMINATION--Continued

Method*	Surface	Action	Technique	Advantages	Disadvantages
Titanium dioxide paste. Prepare paste by mixing precipitated titanium dioxide (a very thick slurry, never permitted to dry) with a small amount of lanolin. If not successful, go on to the next step.	Skin, hands, and extremities. Do not use near face or other body openings.	Same as above.	Work the paste into the affected area for 2 minutes. Rinse and wash with soap and warm water. Monitor.	Removes contamination lodged under scaly surface of skin. Good for heavy surface contamination of skin.	If left on too long will remove skin.
Mix equal volumes of a saturated solution of potassium permanganate and 0.2 N sulfuric acid. (Saturated solution of $KMnO_4$ is 6.4 grams per 100 ml of H_2O.) Continue with next step.	Skin, hands, and extremities. Do not use near face or other openings.	Dissolves contaminant absorbed in the epidermis.	Pour over wet hands, rubbing the surface and using handbrush for not more than 2 minutes. Rinse with water.	Superior for skin contamination. May be used in conjunction with titanium oxide.	Will remove a layer of skin if in contact with the skin for more than 2 minutes.
Apply a freshly prepared 5% solution of sodium acid sulfite. (Solution made by dissolving 5 gm of $NaHSO_3$ crystals in 100 ml distilled water.)	Same as above.	Removes the permanganate stain.	Apply in same manner as above. Apply for not more than 2 minutes. The above procedure may be repeated. Apply lanolin or hand cream when completed.		Same as above
Flushing	Eyes, ears, nose, and mouth	Physical removal by flushing.	Roll back the eyelid as far as possible, flush with large amounts of water. If isotonic irrigants are available, obtain them without delay. Apply to eye continually and then flush with large amounts of water. (Isotonic irrigant [0.9% NaCl solution]: 9 grams NaCl in beaker, fill to 1000 cc with water.) Can be purchased from drug suppliers, etc. Further decontamination should be done under medical supervision.	If used immediately will remove contamination. May also be used for ears, nose, and throat.	When using for nose and mouth, contaminated individual should be warned not to swallow the rinses.

PERSONNEL DECONTAMINATION--Continued

Method*	Surface	Action	Technique	Advantages	Disadvantages
Flushing	Wounds	Physical removal by flushing.	Wash wound with large amounts of water and spread edges to stimulate bleeding, if not profuse. If profuse, stop bleeding first, clean edges of wound, bandage, and if any contamination remains, it may be removed by normal cleaning methods, as above.	Quick and efficient if wound not severe.	May spread contamination to other areas of body if not done carefully.
Sweating	Skin of hands and feet	Physical removal by sweating.	Place hand or foot in plastic glove or booty. Tape shut. Place near source of heat for 10-15 minutes or until hand or foot is sweating profusely. Remove glove and then wash using standard techniques. Or gloves can be worn for several hours using only body heat.	Cleansing action is from inside out. Hand does not dry out.	If glove or booty is not removed shortly after profuse sweating starts and part washed with soap and water immediately, contamination may seep into the pores.

AREA AND MATERIAL DECONTAMINATION

Method*	Surface	Action	Technique	Advantages	Disadvantages
Vacuum cleaning	Dry surfaces	Removes contaminated dust by suction.	Use conventional vacuum technique with efficient filter.	Good on dry, porous surfaces. Avoids water reactions.	All dust must be filtered out of exhaust. Machine is contaminated.
Water	All nonporous surfaces (metal, painted, plastic etc.).	Dissolves and erodes.	For large surfaces Hose with high-pressure water at an optimum distance of 15 to 20 feet. Spray vertical surfaces at an angle of incidence of 30° to 40°; work from top to bottom to avoid recontamination. Work upwind to avoid spray. Determine cleaning rate experimentally, if possible; otherwise, use a rate of 4 square feet per minute.	All water equipment may be utilized. Allows operation to be carried out from a distance. Contamination may be reduced by 50%. Water equipment may be used for solutions of other decontaminating agents.	Drainage must be controlled. Not suitable for porous materials. Oiled surfaces cannot be decontaminated. Not applicable on dry contaminated surfaces (use vacuum); not applicable on pourous surfaces such as wood, concrete, canvas, etc. Spray will be contaminated.

ANNEX 4 MEDICAL AND PUBLIC HEALTH

A. INTRODUCTION

Medical and public health support during a radiological emergency will be carried out in general accordance with the provisions of ANNEX F("Medical Services") to the Massachusetts Comprehensive Emergency Response Plan(CERP). ANNEX F assigns responsibilities and describes general procedures for the provision of emergency medical care to disaster victims, including victims of radiation accidents.

This ANNEX amplifies the responsibilities set forth in ANNEX F of the CERP, and describes specific planning done in the context of the radiological emergency response plan.

B. RESPONSIBILITIES

1. Department of Public Health

Department of Public Health responsibilities include the following:

a. The Office of Emergency Medical Services is responsible for:

   (1) Planning for the distribution of ambulances and ambulance services throughout the Commonwealth;

   (2) Approving courses in emergency medical care for ambulance personnel;

   (3) Developing cost-sharing programs for training of ambulance personnel; and

   (4) Coordinating regional medical communications centers, ambulance services, hospital emergency services, medical utilization of law enforcement and fire units, medical emergency operations centers, and the facilitation of hospital transfers of patients.

b. The Office of Ambulance Regulation is responsible for development and enforcement of regulations concerning:

   (1) The maintenance and operation of ambulances and ambulance services;

(2) Ambulance personnel, safety, sanitation equipment, communications, medical supplies and records; and

(3) The licensing of ambulances and ambulance services.

c. The Office of the Assistant Commissioner is responsible for assuring medical recording and followup of radiologically exposed individuals, and for determining the circumstance under which medical attention would be required or useful for off-site victims of a radiological accident.

2. Massachusetts Civil Defense Agency

Massachusetts Civil Defense Agency responsibilities include:

a. Coordinating the development of medical response plans for radiological emergencies, including the identification and mapping of medical support facilities;

b. Coordinating the identification and utilization of resources for the transportation of off-site victims to medical support facilities; and

c. Provision of back-up communications support for medical transport services.

C. CONCEPTS

1. Local Medical Plans

Because medical services in Massachusetts are primarily the responsibility of private hospitals and physicians, and are delivered on a decntralized basis, each city and town within a ten mile radius of any nuclear power station, and each reception community has, developed a medical services annex to its radiological emergency response plan. This planning effort should result in quicker and more effective delivery of treatment to victims of radiological emergencies.

2. Communications

A "Statewide Emergency Medical Radio Frequency Plan for Massachusetts" was adopted in 1976. Its purpose is to:

a. Furnish Statewide radio communications coverage so that any ambulance or hospital can communicate directly with any other ambulance, dispatch point or hospital in Massachusetts; and

b. Provide a capability for Statewide disaster response coordination, and for the exchange of EMS resource informution.

The following regional emergency medical communications centers have been established, with additional centers being planned:

Medical Emergency Network	Center Location
Central Massachusetts Medical Emergency Radio Network	Worcester
Boston Medical Emergency Radio Network	Boston
Greater Fall River/New Bedford Medical Emergency Radio Network	Fall River
Greater Plymouth Medical Emergency Radio Network	Pembroke
Cape and Islands Medical Emergency Radio Network	Hyannis

3. Medical Transport

Emergency medical transport is provided in Massachusetts by local public and/or private ambulance services. Provision for emergency medical transport has been made in each local radiological emergency response plan (Sections C, D, and E) and an inventory of ambulance services appears in Section B.10 (Resources).

National Guard and military resources can be accessed to supplement these capabilities through provisions of the Massachusetts Comprehensive Emergency Response Plan.

4. Training

Each ambulance operator and attendant in Massachusetts is required to complete an approved emergency medical care course and pass a National Registry Examination. Material on the care and handing of radiation accident patients is included in the approximately 81 required hours of classroom instruction.

5. Facilities

The Joint Commission on Accreditation of Hospitals(JCAH) required that emergency patient care be guided by written policies and procedures. Among the required written policies and procedures is one concerning the emergency management of individuals who have actual or suspected exposure to radiation or who are radioactively contaminated. Such action may include radioactivity monitoring and measurement; designation and any required preparation of space for evaluation of the patient, including, as required, discontinuation of the air circulation system to prevent the spread of contamination; decontamination of the patient through an appropriate cleansing mechanism; and containment, labeling, and dispostion of contaminated materials. The individual responsible for radiation safety should be notified.

A survey conducted by the Department of Public Health indicates strong compliance with JCAH requirements by acute care hospitals in Massachusetts. Partial lists of medical facilities capable of treating off-site victims of nuclear incidents are found in Attachment B.4-1.

All licensed hospitals in Massachusetts are listed in a medical facility inventory in Section B.10 (Resources), together with listings of census data for several key hospital services. Standard large scale maps of each power station area include hospitals in their key. Hospitals will be highlighted by a blue-outlined ellipse with the inventory number of the hospital appearing in blue on the ellipse.

6. Consultants

The Department of Public HEalth maintains liaison with many highly qualified radiologists, physicists and other professionals in both the medical and academic fields. A key consultant resource is the Governor's Advisory Council on Radiation Protection, which is made up of radiologists and nuclear physicists, and meets montly and as needed.

D. PROCEDURES

1. Emergency medical and public health support will, in general, be carried out in accordance with local basic emergency operations and radiological emergency response plans.

2. Coordination of State emergency medical response actions will be in accordance with the Massachusetts Comprehensive Emergency Response Plan, Part One, Attachment I-IV, "Coordination of Emergency Operations," and Annex F, "Medical Services."

3. The Commissioner of Public Health will assign representatives to the Emergency Operating Center in Framingham in addition to the Department of Public Health coordinator assigned primarily for accident assessment, if public health or emergency medical concerns appear to warrant such action.

Based upon intelligence and advice from such assignees, the Commissioner will determine the circumstance under which medical attention would be required or useful for off-site victims of a radiological accident, and advise hospitals and local governments of this determination through established public information channels.

TABLE I

Medical Facilities Capable of Treating Radiation Accident Patients in the Rowe-Vernon Area

Locality	Name & Address of Facility	Telephone
North Adams	North Adams Hospital Hospital Avenue North Adams, MA 20147	413-663-3701
Greenfield	Franklin County Public Hospital 164 High Street Greenfield, MA 01301	413-772-0211
Northampton	Cooley Dickinson Hospital 30 Locust Street Northampton, MA	413-584-4090
Springfield	Bay State Medical Center 759 Chestnut Street Springfield, MA 01107	413-787-3200
Pittsfield	Berkshire Medical Care 725 North Street Pittsfield, MA 01201	413-499-4161
Winchendon	Winchendon Hospital High Street Winchendon, MA 01457	617-297-2311

TABLE II

Medical Facilities Capable of Treating Radiation Accident Patients in the Plymouth Area

Locality	Name & Address of Facility	Telephone
Plymouth	Jordan Hospital Sandwich Road Plymouth, MA 02360	617-746-2000
Middleborough	St. Luke's Hospital 52 Oak Street Middleborough, MA 02346	617-947-6000
Wareham	Tobey Hospital 43 High Street Wareham, MA 01082	617-295-0880
Hyannis	Cape Cod Hospital 27 Park Street Hyannis, MA 03601	617-771-1800
New Bedford	St. Luke's Hospital 101 Page Street New Bedford, MA	617-997-1515
Brockton	Brockton Hospital 690 Centre Street Brockton, MA 02401	617-586-2600
Brockton	Cardinal Cushing General Hospital 235 N Pearl Street Brockton, MA 02401	617-588-4000
Stoughton	Goddard Memorial Hospital 905 Summer Street Stoughton, MA 02070	617-344-5100
Fall River	St. Anne's Hospital 795 Middle Street Fall River, MA 02721	617-674-5741
Fall River	Union-Truesdale Hospital Union Building 1820 Highland Avenue Fall River, MA 02721	617-674-8611

TABLE III

Other Medical Facilities Capable of Treating Radiation Accident Patients

Locality	Name & Address of Facility	Telephone
Boston	Peter Bent Brigham Hospital 721 Huntington Avenue Boston, MA 02115	617-732-6000
Boston	Massachusetts General Hospital 32 Fruit Street Boston, MA 02114	617-726-2000
Worcester	University of Massachusetts Medical Center 55 Lake Avenue North Worcester, MA 01605	

ANNEX 5 RECOVERY AND REENTRY

A. INTRODUCTION

This Annex establishes responsibilities and outlines tasks and procedures for reentry into areas where access has been controlled following a radiological emergency, and recovery from the emergency. A recovery plan must be flexible enough to adapt to existing, rather than theoretical conditions, since it is not possible to anticipate in advance all of the conditions that may be encountered in an emergency situation. This Annex has been developed in accordance with the principles of Part Two, "Recovery" of the Massachusetts Comprehensive Emergency Response Plan, and is intended as a guide for developing a flexible plan of action following a radiological emergency.

B. APPLICABILITY

The provisions of this Annex are applicable to all departments and agencies involved in reentry and recovery assessment and operations, and to any private or Federal resources used by the Commissioner of Public Health in such operations.

C. REFERENCES

Massachusetts Comprehensive Emergency Response Plan, Part Two, "Recovery"

NIAT Handbook

Radiological Defense Handbook, CPG 2-6.a, April, 1975

Radiological Emergency Response Operations, Category IV course materials, Reynolds Electrical and Engineering Company

D. RESPONSIBILITIES

1. Commissioner of Public Health

The Commissioner of Public Health's responsibilities include:

a. Determining, based upon all available radiological surveillance data, areas affected by radiation requiring control of access;

b. Reviewing radiation exposure of personnel to determine suitability to participate in recovery operations;

c. Organize a State technical group, within the context of the Inter-Secretariat Emergency Coordinating Committee, and composed of State Agency (MCDA, DEQE, DPH, etc.) personnel, supplemented by available consultants, to undertake recovery planning and operations.

d. Determine suitability of relaxing access control actions in accordance with Protective Action Guides reflected in Attachment B.5-1, Massachusetts RPG Table 3. (The decision to permit reentry is solely the Commissioner's, and he or she may choose to relax or tighten RPG guidance, for all or part of the population at risk, depending upon circumstances.)

2. Massachusetts Civil Defense Agency (MCDA)

The Massachusetts Civil Defense Agency is responsible for coordinating the utilization of both State and local radiological defense services in support of reentry and recovery.

MCDA will generally perform this coordination in accordance with the principles of CPG 2-6.1, Radiological Defense Preparedness. Decontamination Procedures are outlined in Attachment B.5-2. (Radiological Emergency Response Operations; see References.)

TABLE 3.

RADIATION PROTECTION GUIDES (RPG) — NON OCCUPATIONAL AND MINORS

ABSORBED DOSES TO INDIVIDUALS NOT OCCUPATIONALLY INVOLVED WITH IONIZING RADIATION AND MINORS

Aspect of the General Environment in and/or from Which an Individual Might Be Exposed to Ionizing Radiation	RPG Absorbed Dose to Indicated Portions of the Body of a "Standard Man"					
	External Exposure Dose Only To Whole Body	Total Dose Resulting from Both External and Internal Exposures* to				
		Whole Body Gonads Act. Bl.-Form. Organs Head and Trunk Lens of Eye	Skin of Wh. Body Thyroid	Hands and Forearms Feet and Ankles	Other Organs	Bone
Ambient Air Space (External Exposure)	0.5 rem/yr.					
Air Breathed and Water and Foodstuffs Consumed (Internal Exposure)		Not more than 0.125 rem in 13 consec. wks.	Not more than 0.75 rem in 13 consec. wks.	Not more than 1.875 rem in 13 wks.	Not more than 0.375 rem in 13 wks.	Not more than 0.7 rem in 13 wks.

*Not more than 0.5 rem/yr. of the indicated total yearly doses shall result from external exposure.

APPENDIX I

Decontamination Methods

Surface	Method	Advantages	Disadvantages
Paint	Water	Most practical method of gross decontamination from a distance. Contamination reduced by approximately 50%.	Protection needed from contaminated spray. Runoff must be controlled. Water under pressure should not be used on a surface covered with a contaminated dust.
	Steam (with detergent if available)	Most practical method for decontaminating large horizontal, vertical, and overhead surfaces. Contamination reduced by approximately 90%.	Same as for water.
	Soapless detergents	Where effective, reduces activity to safe level in 1 or 2 applications.	Mild action.
	Complexing agents,[a] oxalates, carbonates, citrates[b]	Holds contamination in solution. Contamination on unweathered surfaces reduced by approximately 75% in 4 min. Easily stored, nontoxic, noncorrosive.	Requires application from 5-30 min. for effectiveness. Has little penetrating power; hence of small value on weathered surfaces.
	Organic solvents	Quick dissolving action makes solvents useful on vertical and overhead surfaces.	Toxic and flammable. Requires good ventilation and fire precautions.
	Caustics[c]	Minimum contact with contaminated surface. Contamination reduced almost 100%.	Applicable only on horizontal surfaces. Personnel hazard. Not to be used on aluminum or magnesium.
	Abrasion (wet sandblasting)	Complete removal of surface and contamination. Feasible for large-scale operations.	Contaminated sand spread over large area. Method too harsh for many surfaces.
Metal	Water	Contamination reduced by approximately 50%.	Same as for painted surfaces.
	Detergents	Removal of oil or grease films.	Same as for painted surfaces.
	Organic solvents	Stripping of grease.	Same as for painted surfaces.
	Complexing agents,[a] oxalates, carbonates, citrates[b]	Holds contamination in solution.	Difficult to keep in place on any but horizontal surfaces. limited value on weathered porous surfaces.
	Inorganic acids	Fast, complete decontamination.	Good ventilation required; acid fumes toxic to personnel. Possibility of excessive corrosion. Acid mixture cannot be safely heated.
	Acid mixtures	Action of weak acid. Reduces contamination of unweathered surfaces.	Same as for inorganic acids.
	Abrasion (buffers, grinders)	Useful for detailed cleaning.	Follow-up procedured required to pick up powdered contamination.
	Abrasion (wet sandblasting)	Same as for painted surfaces.	Same as for painted surfaces.

Surface	Method	Advantages	Disadvantages
Concrete	Abrasion (vacuum blasting)	Direct removal of contaminated dust.	Contamination of equipment.
	Vacuum cleaning	Same as for vacuum blasting on concrete.	Same as for vacuum blasting on concrete.
	Flame cleaning	Only method of trapping contamination on surface.	Slow and painstaking. Fire and airborne radiation hazard is great.
Brick	Same as for concrete.	Same as for concrete.	Same as for concrete.
Asphalt	Abrasion	No direct contact with surface; contamination may be reduced to safe level.	Residual contamination fixed into asphalt. If road is subject to further contamination, may require recovering.
Wood	Flame cleaning	Sameas for flame cleaning on concrete.	Same as for flame cleaning on concrete.

[a] Another complexing agent would be a solution of 1% ethylenediaminetetracetic acid ("Versene," Sequestrene in water.)

[b] Oxalates, carbonates or citrates may be the ammonium or sodium salts.

[c] Caustics should perferably be trisodium phosphate or sodium sesquicarbonate rather than hydroxides since they are less hazardous.

A PRELIMINARY SUMMARY OF BUILDING-MATERIAL DECONTAMINATION PROCEDURES

Procedures, Equipment, and Additives	Techniques and Surfaces	Advantages	Limitations
1. Vacuuming, using appropriate-capacity industrial-type vacuum cleaner plus suitable exhaust filter. No additives.	Conventional procedure, applies to almost any surface covered by dry loose contaminant.	Retains residue and filters exhaust, reducing aerosols. Often the first step.	Applicable only to dry loose contaminant. Face masks advisable. Slow rate, therefore requires increased manpower and equipment for large areas.
2. Hosing, using hose and nozzle. No additives.	Progress from low to high contamination areas taking advantage of available drainage. Applies to building and floor materials.	Inexpensive procedure for gross decontamination. Minimum protective clothing.	Consumes large volumes of water. Runoff must be controlled.
3. Hosing-hand scrubbing, using hose and nozzle plus floor brushes and mop buckets. Additives: detergents and complexing agents.	Hose, progressing from low to high contamination areas taking advantage of available drainage, then hand scrub with solution containing 1% additive, and follow with hose flush. Applies to building materials.	Effective procedure on dirty and greasy surfaces. Additives easily stored, nontoxic, noncorrosive, minimum protective clothing.	Rate slower than (2). More manpower than (2). Additives use up storage space and not always available.
4. Hot-liquid-jet cleaning--hand scrubbing--hosing, using steam injector, lance, floor brushes and hose, boots and face shields. Additives: detergents and complexing agents.	Educt solution (containing 20% additive) with injector and scrub simultaneously, then follow with hose flush. Applies to building and floor materials.	Same as (3) except for reduction in runoff.	Requires special equipment and steam source. Otherwise same as (3). Steam introduces personnel hazard. Moderate protective clothing required.
5. Steam cleaning, using hose and steam lance, boots and face shields. Additives: detergents and complexing agents.	Additives introduced into flow system to produce 1% solution at lance, proceed as in (2). Applies to building and floor materials; major equipment.	Reduced runoff, low manpower, otherwise same as (3)	Requires steam source. Rate lower than (2). Additives use up storage space and not always available. Steam introduces personnel hazard. Moderate protective clothing required.
6. Stripping--hosing, using drum pump or spray pot, air and liquid hose, lance, hose and nozzle, protective hoods with air lines, boots and rubber gloves. Additives: Sodium, calcium, or potassium, hydroxide containing thickening agents such as starch.	Spray 10 to 20% caustic solution containing thickening agent 24 hour in advance of hose flush, proceed as in (2). Applies to painted surfaces.	Highly effective, removes paint down to base surface. Faster than sandblasting.	Requires special equipment and maximum protective clothing. Hazardous to personnel. Storage and availability problems. Will not remove rust. Cannot be used on aluminum and magnesium surfaces.

Procedures, Equipment, and Additives	Techniques and Surfaces	Advantages	Limitations
7. Paint stripping and hosing, using same equipment as (6) and (8). Additive: cresylic acid.	Same as (6) and (8) except standing time not established. Applies to painted surfaces.	Same as (6) and (8). Removes certain paints not affected by caustics. Can be used on aluminum and magnesium surfaces.	Additive more expensive than caustic, otherwise same as (6).
8. Paint stripping--steam cleaning, using equipment same as (6) except steam hose and lance replace firehose. Additives same as (6).	Spray caustic 24 hour in advance of steam cleaning. Applies to painted surfaces.	Reduce runoff. Otherwise same as (6).	Same as (6).
9. Degreasing--hand scrubbing--rinsing, using spray rig or hand applicators, scrub brushes and water hose or steam line. Additives: emulsifying type degreasers.	Apply degreaser, scrub and rinse (before compound dries) with water detergent solution or steam. Applies to machinery, vehicles, etc.	Removes heavy grease, oil, and dirt deposits not affected by detergents.	Rate slower than (2). More manpower than (2). Additives use up storage space and not always available.
10. Dipping--rinsing, using crane or hoist, dip tank and rinse tank, or hosing or steaming facility. Additives: Same as (6), (7), and (9).	Immerse in suitable additive until grease or paint has been removed and rinse. Applies to portable gear such as pumps,	May be handled remotely, otherwise same as (6), (7), (8), and (9). Solution usually reusable over may applications.	Requires heavy equipment and therefore increased manpower. Limits size of objects decontaminated.
11. Rust removing--rinsing, using swabs, scrub brushers, and water hose or steam line. Additives: inhibited hydrochloric acid.	Coat rust areas with remover, scrub and rinse. Applies to rusty surfaces.	Replaces need for more expensive sandblasting in certain instances.	Hazardous, slow, not so thorough as sandblasting. Requires maximum protective clothing.
12. Sandblasting, using sandblasting machine, air and sand hose, blast hoods with air lines. Additives: Water may be introduced to reduce aerosols.	A standard industrial procedure. Applies to building material such as metal, wood, stone, concrete, etc. Painted and/or rusty surfaces.	Effective, removes rust as well as paint.	Extremely slow, expensive, creates aerosol hazard. Maximum protective clothing.
13. Vacuum blasting using vacuum blasting machine. Additives: special abrasive shot.	Conventional procedures. Applies to building material such as metal, wood, stone, concrete, etc. Painted and/or rusty surfaces.	Vacuum residue, reducing aerosols, otherwise same as (2). Recycles and reuses abrasive.	Slow, awkward for areas other than horizontal. Face masks advisable. Auxiliary exhaust filters required.
14. Floor refinishing using floor-resurfacing machines. No additives.	Planes off layer of material through action of rotary cutting tools. Applies to wood, concrete, brick, etc.	Only means short of demolition in some cases.	Requires follow-up method to retrieve residue. Slow. Surface destructive. Aerosol hazard. Face masks required.

CONTAMINABILITY TO FISSION PRODUCTS

	<10%	10-30%	30-70%	>70%
Polythene, Teflon, and Saran	All normal conditions			
Water-repellant paints (unweathered)	-----	When oxidized or covered with foreign deposits		
Formaldehyde resins	-----	Most solutions		
Glass (plate)	-----	Aged fission products		
Lead	With Ba^{140} in HCl	Surface scarred	-----	With $H_2P^{32}O_4^-$, aged fission products
Polished stainless steel (type 147)	Dilute acid solutions of carrier-free P^{32}, Ba^{140}, and I^{131}	-----	Aged fission products in dilute acid	
Unpolished stainless steel	Unblemished	Blemished		
Structural steel	-----	Dilute acid solutions	With P^{32}	
Glazed-tile surfaces	-----	When coated with laboratory or industrial film deposits		
Best grades of floor tile	-----	-----	Floor tiles in good condition	Tiles scarred or scratched (worn)
Plastic spray coats	Dried without pinholes	Pinholes on evaporation of solvent		
Alberene stone	-----	Impregnated with vinyl resins	Impregnated with formaldehyde or phenolic resins	Untreated
Transite	-----	-----	-----	Untreated, contaminated with most acid solutions
Concrete	Painted, unworn	Painted, worn	Smooth but not impregnated. Exposed to insoluble hydroxides under alkaline conditions	Untreated, contaminated with most acid solutions

EFFECT OF RADIOACTIVITY LEVEL ON CONTAMINATION

Level	<1 μc	1 μc to 1 mc	1 mc to 1 curie	>1 curie
Features of technique	Quantitative technique 99.9% control, aseptic precautions	99.999% control segregation of equipment to avoid cross contamination, avoid spattering and solution losses	99.999999% control, enclosed operations, either equipment or area	Extreme control, complete enclosure, buffer areas
Special features of laboratory and equipment, in addition to aseptic precautions	Ordinary laboratory	Radiochemical hood desirable, storage and cleaning facilities duplicated, protect bench tops	Radiochemical hood mandadatory, dry boxes advisable. Cleaning ducts, special waste disposal. High-efficiency hood and dry-box filters	Decontaminable ducts and drains, dry box or isolated cubical with high-efficiency filters
Special problems	Protection of experiments ments in vicinity of higher-level operations	Absorption of high specific activity material; hand contamination and second-order transfer	Decontaminatable surfaces; accumulation (long-lived activity); ventilation, protection against accidents important	Gas, liquid, and solid waste storage or disposal
Examples	Tracer-level experiments with β-counting	Tracer-level experiments with γ-activity counting; preparation of stocks of β-tracer, process tracer application. Isolation of a radionuclide which is a constituent of a mixture	Preparation of stocks of γ-tracer, high-level C^{14} synthesis, therapeutic work. Isolation of a radionuclide which is a minor constituent of a mixture	Radioactive sources for radiography, etc.

Tompkins, P.C., and H. A. Levy, Impact of Radioactivity on Chemical Laboratory Techniques and Design, *Ind. Eng. Chem.*, vol. 41, p. 228, 1949.

GENERAL REAGENTS FOR DECONTAMINATION

Reagent Type	Typical Representative	Where Used	Remarks
Mineral acids	HCl, HNO_3, H_2SO_4	Metals, glass, plastics, paint	10% solutions for dilute reagents. Destructive to surface. Usually most efficient reagents if materials can tolerate their use
Strong oxidizing solutions	Chromic acid cleaning solution	Glass, metals	Laboratory cleaning agent. Last-resort treatment. Often used for Pu
Trisodium phosphate	-----	Glass, paints, plastics	10% solution. Often used hot. Removes wax and is hard on paint
Fluoride	$(NH_4)_2SiF_6$	Glass, porcelain, and other silicone materials	0.1 - 1% solution
Complexing agents	Sodium citrate, versene	All materials	1-10% solutions. Efficiency variable and pH-dependent. Often preferred choice for general use
Detergents	Household or commercial cleaning detergents such as Tide	All materials	Efficiency variable. Choice sensitive to water properties as well as materials and contaminants used with scrubbing

SOURCES OF RADIOACTIVE CONTAMINATION

1. Chemical reactions leading to the loss of a gas.
2. Evaporation of a liquid.
3. Aeration of liquid.
4. Liquid transfers of all kinds.
5. Grinding or manipulation of a solid.
6. Recoil from radioactive disintegration (especially with alpha emitters).
7. Absorption on surfaces (especially high-specific-activity material).

AREA AND MATERIAL DECONTAMINATION--Continued

Method*	Surface	Action	Technique	Advantages	Disadvantages
Water (Cont'd)	All surfaces	Dissolves and erodes.	For small surfaces Blot up liquid and hand-wipe with water and appropriate commercial detergent.	Extremely effective if done immediately after spill and on nonporous surfaces.	Of little value in the decontamination of large areas, longstanding contaminants and porous surfaces.
Steam	Nonporous surfaces (especially painted or oiled surfaces).	Same as above.	Work from top to bottom and from upwind. Clean surface at a rate of 4 square feet per minute. The cleaning efficiency of steam will be greatly increased by using detergents.	Contamination may be reduced approximately 90% on painted surfaces.	Steam subject to same limitations as water. Spray hazard makes the wearing of water-proof outfits necessary.
Detergents	Nonporous surfaces (metal, painted, glass, plastic, etc.).	Emulsifies contaminant and increases wetting power of water and cleaning efficiency of steam.	Rub surface 1 minute with a rag moistened with detergent solution then wipe with dry rag; use clean surface of the rag for each application. Use a power rotary brush with pressure feed for more efficient cleaning. Apply solution from a distance with a pressure proportioner. Do not allow solution to drip onto other surfaces. Mist application is all that is necessary.	Dissolve industrial film and other materials which hold contamination. Contamination may be reduced by 90%.	May require personal contact with surface. May not be efficient on longstanding contamination.
Complexing agents	Nonporous surfaces (especially unweathered surfaces; i.e., no rust or calcareous growth).	Forms soluble complexes with contaminated material.	Complexing agent solution should contain 3% (by weight) of agent. Spray surface with solution. Keep surface moist 30 minutes by spraying with solution periodically. After 30 minutes, flush material off with water. Complexing agents may be used on vertical and overhead surfaces by adding chemical foam (sodium carbonate or aluminum sulfate).	Holds contamination in solution. Contamination may be reduced by 75% in 4 minutes on unweathered surfaces. Easily stored; carbonates and citrates are nontoxic, noncorrosive.	Requires application for 5 to 30 minutes. Little penetrating power; of small value on weathered surfaces.

AREA AND MATERIAL DECONTAMINATION--Continued

Method*	Surface	Action	Technique	Advantages	Disadvantages
Organic solvents	Nonporous surfaces (greasy or waxed surfaces, paint or plastic finishes, etc.)	Dissolves organic materials (oil, paint, etc.).	Immerse entire unit in solvent or apply by wiping procedure (see Detergents).	Quick dissolving action. Recovery of solvent possible by distillation.	Requires good ventilation and fire precautions. Toxic to personnel. Material bulky.
Inorganic acids	Metal surfaces (especially with porous deposits; i.e., rust or calcareous growth); circulatory pipe systems.	Dissolves porous deposits.	Use dip-bath procedure for movable items. Acid should be kept at a concentration of 1 to 2 normal (9 to 18% hydrochloric, 3 to 6% sulfuric acid). Leave on weathered surfaces for 1 hour. Flush surface with water, scrub with a water-detergent solution, and rinse. Leave in pipe circulatory system 2 to 4 hours; flush with plain water, a water-detergent solution, then again with plain water.	Corrosive action on metal and porous deposits.	Personal hazard. Wear goggles, rubber boots, gloves and aprons. Good ventilation required because of toxicity and explosive gases. Acid mixtures should not be heated. Possibility of excessive corrosion if used without inhibitors. Sulfuric acid not effective on calcareous deposits.
Acid mixtures: hydrochloric, sulfuric, acetic, citric acids.	Nonporous surfaces (especially with porous deposits); circulatory pipe systems.	Dissolves porous deposits.	Same as for inorganic acids. A typical mixture consists of 0.1 gal. hydrochloric acid, 0.2 lb. sodium acetate and 1 gal. water.	Contamination may reduced by 90% in 1 hour (unweathered surfaces). More easily handled then inorganic acid solutions.	Weathered surfaces may require prolonged treatment. Same safety precautions as required for inorganic acids.
Caustics: lye (sodium hydroxide), calcium hydroxide, potassium hydroxide	Painted surfaces (horizontal).	Softens paint (harsh method).	Allow paint remover solution to remain on surface until paint is softened to the point where it may be washed off with water. Remove remaining paint with long-handled scrapers. Typical paint remover solution: 10 gal. water, 4 lb. lye, 6 lb. boiler compound, 0.75 lb. cornstarch.	Minimum contact with contaminated surfaces. Easily stored.	Personal hazard (will cause burns). Reaction slow; thus, it is not efficient on vertical or overhead surfaces. Should not be used on aluminum or magnesium.
Trisodium phosphate	Painted surfaces (vertical, overhead).	Softens paint (mild method).	Apply hot 10% solution by rubbing and wiping procedure (see Detergent).	Contamination may be reduced to tolerance in one or two applications.	Destructive effect on paint. Should not be used on aluminum or magnesium.

AREA AND MATERIAL DECONTAMINATION--Continued

Method*	Surface	Action	Technique	Advantages	Disadvantages
Abrasion	Nonporous surfaces.	Removes surface.	Use conventional procedures, such as sanding, filing, and chipping; keep surface damp to avoid dust hazard.	Contamination may be reduced to as low a level as desired.	Impracticable for porous surfaces because of penetration by moisture.
Sandblasting	Nonporous surfaces.	Removes surface.	Keep sand wet to lessen spread of contamination. Collect used abrasive or flush away with water.	Practical for large surface areas.	Contamination spread over area must be removed. Contaminated dust is personnel hazard.
Vacuum blasting	Porous and nonporous surfaces.	Removes surface; traps and controls contaminated waste.	Hold tool flush to surface to prevent escape of contamination.	Contaminated waste ready for disposal. Safest abrasion method.	Contamination of equipment.

Formulas Used for Decontamination of Personnel

1.	Soap and shampoo.	1.	Preliminary wash. Scrub well.
2.	Abrasive soap (Lava).	2.	Use with water and brush.
3.	50% cornmeal plus 50% detergent (Tide) plus water to a paste.	3.	Scrub well with brush.
4.	Solid mixture of 30% detergent (Tide), 65% Calgon and 5% Carbose (carboxymethyl cellulose)	4.	Prepare a 5% water solution of this mixture for spot cleaning with swabs or for use on the hands.
5.	8% Carbose, 3% detergent, 1% Versene, 8% water. Homogenize into a cream.	5.	Use without additional water. Rub into skin 3 to 5 min. and wash off with water. Use only in stubborn cases since Versene may increase the absorption of the radioelement.
6.	Mechanic's waterless handcleaning cream.	6.	Good for grease. Less irritating than scrubbing methods.
7.	Lanolin hand cream.	7.	Use between washes when skin becomes irritated from heavy scrubbing.
8.	Saturated solution of potassium permanganate followed by sodium bisulfite to remove the stain.	8.	Kills outer layers of skin. Should be done only under a doctor's supervision. Used only as a last-resort method.

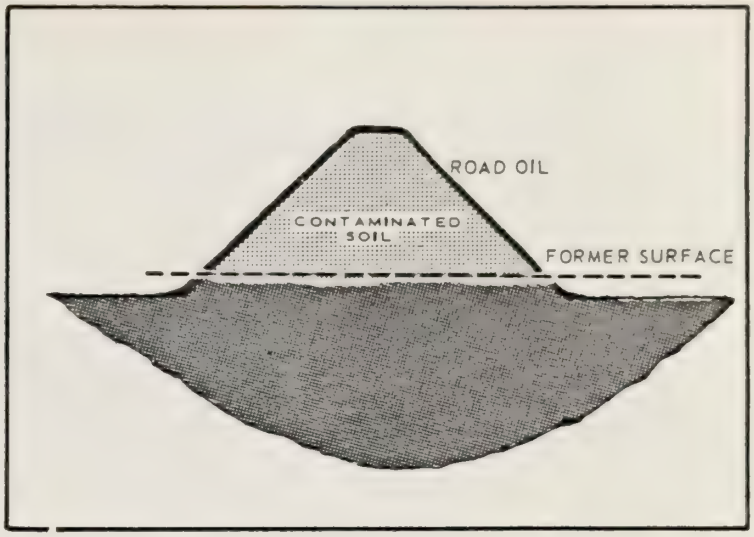


Figure 1
Windrow Cross Section

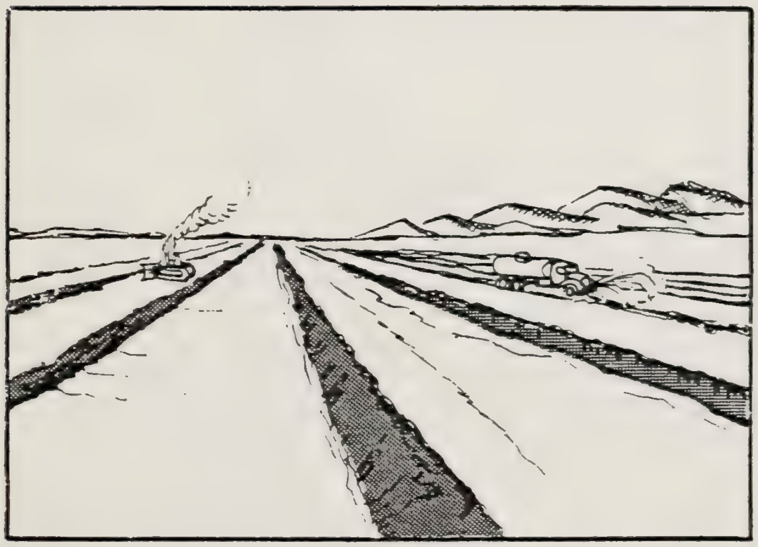


Figure 2 Windrows

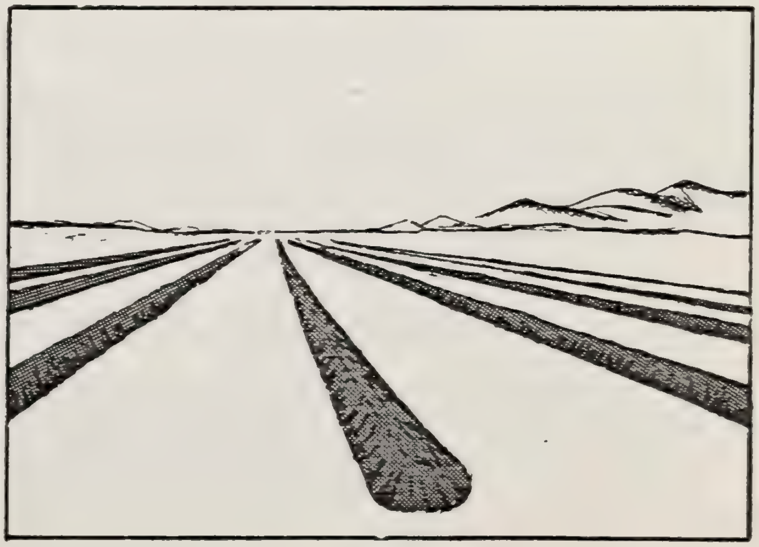


Figure 3
Fixed Windrows

ANNEX 6 INTERSTATE COORDINATION

A. INTRODUCTION

This Annex establishes responsibilities and outlines tasks and procedures associated with interstate coordination of emergency planning for radiological incidents, and incorporates the New England Interstate Radiation Incident Plan (Attachment B.6-1) and the New England Civil Defense Compact (Attachment B.6-2).

B. APPLICABILITY

1. The provisions of the New England Interstate Radiation Incident Plan and the New England Civil Defense Compact are applicable to all six New England States.

2. The location of nuclear power stations at Vernon, Vermont, near the Massachusetts and New Hampshire borders; and at Rowe, Massachusetts, near the Vermont border, has necessitated coordinated response planning among the three involved States with respect to both plume and ingestion pathway protective actions. Accordingly, a proposed Tri-State Radiological Emergency Response Coordination Agreement has been developed by the State planners involved in developing each State's radiological emergency response plan, and its concepts are being incorporated into each plan. These concepts are applicable to the States of Massachusetts, New Hampshire and Vermont.

C. RESPONSIBILITIES

1. Massachusetts Civil Defense Agency (MCDA)

   MCDA is responsible for coordination of radiological emergency response planning, from the perspective of the State of Massachusetts, with the States of New Hampshire and Vermont. To the extent that a radiological accident may have ingestion pathway consequences in Rhode Island or Connecticut, this responsibility extends to those States also.

2. Massachusetts Department of Public Health (DPH)

   DPH is responsible, from the Massachusetts perspective, for maintenance of the New England Interstate Radiation Incident Plan, and for insuring the adoption of uniform or highly compatible protective action guides.

D. TRI-STATE RADIOLOGICAL EMERGENCY RESPONSE COORDINATION AGREEMENT CONCEPTS

The following concepts reflected in the proposed Tri-State Radiological Emergency Response Coordination Agreement are incorporated in this Annex:

1. Uniform notification procedures will be implemented for all affected states by the nuclear facility. Each state will proceed with warning affected towns.

2. State boundaries shall be kept open for traffic moving away from risk areas. Border traffic control point operation responsibilities will be shared as resources permit.

3. Emergency Broadcast System in affected states will participate in public advisories.

4. Reception Centers, Processing Centers, and (in Vermont) Operating Relocations Centers will provide services for any evacuee from risk areas located in any state.

5. All medical facilities within 50 miles of a nuclear facility will respond as able when requested to assist with medical emergencies and hospital and nursing home evacuation.

6. Available emergency medical transport units within 50 miles of an affected nuclear facility will respond as able when requested to assist with medical emergencies and hospital and nursing home evacuation.

7. State Health personnel located at any Emergency Coordinating Center operated by an affected facility will provide current data and information to the Emergency Operating Centers of any other state without personnel in attendance because of travel time or other response delays.

8. Each State Health Department will assure that mutually acceptable protective action levels and protective measures, consistent with Federal guidance, are adopted.

E. IMPLEMENTATION

1. Notification

Compatible notification procedures have been adopted by all three states, and is reflected in the notification procedures in Section A.2 of this Plan. Section A.2 also reflects proposed requirements of the Nuclear Regulatory Commission (NUREG 0610) relative to the basis for emergency action levels. These have been adopted also in a draft revision to the Vermont radiological emergency response plan.

2. Traffic Control

Procedures to assure compatible traffic control have been adopted, and are reflected in Sections D.1 and E.1 of this plan. Key traffic control points at State borders will be manned by State Police cruisers from both states, assuring back-up inter-state communications capability.

3. Public Advisories

Procedures for compatible use of broadcast media are reflected in Section A.4 of this plan.

4. Reception and Processing

Affected states have exchanged information on potential inter-state evacuation. Sections D.1 and E.1, and local reception plans in Sections D and E make provision for such reception.

5. Medical Facilities and Medical Transport

Information on medical facilities and medical transport has been exchanged among the three affected states. Massachusetts information is reflected in Sections B.4 and F of this plan.

6. Mapping

Operations maps common to the three states have been developed, and are described in Section A.3 of this plan.

7. A high degree of inter-state communications capability exists among the three states, and is described in Section A.2 of this plan and in Attachment 1 to Part One of the Massachusetts Comprehensive Emergency Response Plan.

NEW ENGLAND

INTERSTATE RADIATION INCIDENT PLAN

PREPARED BY THE

NEW ENGLAND RADIOLOGICAL HEALTH COMMITTEE

March, 1979

NEW ENGLAND INTERSTATE RADIATION INCIDENT PLAN

ARTICLE I - AUTHORITY

This plan is authorized by the New England Compact on Radiological Health Protection, as approved by the Legislatures and Governors of the several party States.

ARTICLE II - PURPOSE

The purpose of this plan is to name the manner in which the New England Compact on Radiological Health will be administered.

ARTICLE III - DELEGATION OF AUTHORITY

The Compact Administrator for each party State shall notify the other party States of the identity of any subordinate or subordinates to whom his authority as Compact Administrator has been delegated. (See Appendix I.)

ARTICLE IV - COMMUNICATIONS

Each Compact Administrator shall prescribe the manner in which communication with his State is to be handled. He shall provide the home and office telephone numbers of himself and/or such staff members as he may designate. In addition, he shall provide a second channel of communication such as the State Police, which will be operative 24 hours a day--7 days a week and shall arrange within his State for emergency communications to reach a responsible member of his staff. Each Compact Administrator shall notify the party State Compact Administrator of the communication procedure. (See Appendix I.)

ARTICLE V - LISTINGS OF EQUIPMENT AND LABORATORY CAPABILITIES

Each Compact Administrator shall transmit to all other party States a listing of available field survey equipment including range, other emergency equipment, and a listing of available laboratory capabilities by type of analysis (i.e. gross alpha, gross beta, gamma spectroscopy, 3H, 14C, etc.). Such listings shall be updated once a year or more often if conditions warrant. (See Appendix II.)

ARTICLE VI - RADIATION INCIDENTS

(a) Upon determination by a Compact Administrator that a radiation incident has taken place within his State of a magnitude sufficient to require additional manpower or equipment, the Compact Administrator shall contact such other party State or States as he shall judge to be best able to assist him under the circumstances and shall request such aid as he deems necessary. The State or States receiving such a request shall respond with men and/or equipment to the best of their ability while maintaining sufficient capability for the protection of the public health within their own State.

(b) Any State responding to a request for aid under this plan shall operate, while in a party State, in accordance with the radiation incident plan of that State.

(c) Each Compact Administrator shall transmit his radiation incident plan to all other party States. Prior to adoption of a new or revised State radiation incident plan, each party State shall review and comment on such plan. All State laws, rules, and regulations relating to radiation and the intrastate radiation incident plan shall be kept current and transmitted by each Compact Administrator to the party State Compact Administrators.

(d) Reimbursement by the State receiving aid or assistance under this Article for any loss or damage to, or expense incurred in the operation of any equipment; for the cost of all materials, transportation and maintenance of officers, employees, and equipment; and for any compensation or benefits for injuries or death incurred by officers or employees of an aiding State shall be in accordance with Article X.

ARTICLE VII - NOTIFICATION

The notification of other party States under this plan shall be made directly by the Compact Administrators; and such notification shall also be made to the Secretary, New England Radiological Health Committee.

ARTICLE VIII - LOAN OF FACILITIES AND EQUIPMENT

Facilities and equipment may be loaned as specified in Article V of the New England Compact. Requests for loans shall be transmitted through, and have the approval of, the respective Compact Administrators. All such facilities or items of equipment shall be returned in as good condition as when received. The cost of any repairs necessary shall be the responsibility of the borrowing department, agency, or officer. Costs of transportation of equipment to and from the borrowing State shall be borne by that State.

ARTICLE IX - LOAN OF PERSONNEL

Professional or technical personnel having special skills or training related to radiation protection may be made available to a party State by appropriate departments, agencies, or officers of other party States upon request. Such requests shall be transmitted through, and have the approval of, the respective Compact Administrators. The requesting State shall reimburse the lending State in accordance with Article X.

ARTICLE X - CHARGES FOR EQUIPMENT AND PERSONNEL

(a) The State receiving aid or assistance shall reimburse the State rendering aid or assistance for any loss or damage incurred in the operation of any equipment.

(b) The State receiving aid or assistance shall pay for the cost of transporting and maintaining all officers and employees of the State rendering aid in accordance with the rendering State's Rules and Regulations, or those of the State receiving aid--whichever is greater.

(c) The party State borrowing personnel shall reimburse the State loaning the personnel at the same annual rate as the personnel are receiving in their own State. The borrowing State shall pay for the cost of maintaining such personnel in accordance with Article X, Section (b).

(d) Nothing contained herein in Article X shall prevent any assisting party State from assuming the costs incurred under Sections (a), (b), and (c) of Article X.

March, 1979

APPENDIX I

CONNECTICUT

Compact Administrator	Commissioner of Environmental Protection Stanley J. Pac Business Tel: (203) 566-2110
Designated Emergency Contacts	Arthur T. Heubner Business Tel: (203) 566-5668, 5134 Home Tel: (203) 521-5050
	Joseph R. Smolen Business Tel: (203) 566-5668, 5134 Home Tel: (203) 526-9294
	Kevin McCarthy Business Tel: (203) 566-5668, 5134 Home Tel: (203) 487-0305
24-Hour-A-Day Contact	Connecticut State Police (203) 566-4240 Ask for Executive Officer

Business Hours: 8:30 - 4:30

MAINE

Compact Administrator	Commissioner, Department of Human Services David E. Smith Business Tel: (207) 289-2376
Designated Emergency Contacts	Donald C. Hoxie Business Tel: (207) 289-3826 Home Tel: (207) 622-7445
	John Cameron Business Tel: (207) 289-3826 Home Tel: (207) 622-9536
	Wallace W. Hinckley Business Tel: (207) 289-3826 Home Tel: (207) 395-4293
24-Hour-A-Day Contact	Maine State Police (207) 289-2155

Business Hours: 8:00 - 5:00

MASSACHUSETTS

Compact Administrator	Commissioner, Department of Public Health Alfred L. Frechette, M. D. (Acting) Business Tel: (617) 727-2700
Designated Emergency Contacts	Gerald S. Parker Business Tel: (617) 727-6214, 6246 Home Tel: (617) 734-1196
	George Swible Business Tel: (617) 727-6214, 6246 Home Tel: (617) 387-7768
	Elise Comproni Business Tel: (617) 727-6214, 6246 Home Tel: (617) 749-0214
24-Hour-A-Day Contact	Massachusetts State Police (617) 566-4500

Business Hours: 8:45 - 5:00

NEW HAMPSHIRE

Compact Administrator	Director, State Radiation Control Agency John R. Stanton Business Tel: (603) 271-4588 Home Tel: (603) 623-4743
Designated Emergency Contact	Diane Tefft Business Tel: (603) 271-4588 Home Tel: (603) 524-3358
24-Hour-A-Day Contact	New Hampshire State Police (603) 271-3636

Business Hours: 8:30 - 5:00 (Labor Day to last Monday in June)
8:00 - 4:30 (Last Monday in June to Labor Day)

RHODE ISLAND

Compact Administrator	Director, Department of Health Joseph E. Cannon, M. D. Business Tel: (401) 277-2231
To Request Aid from Rhode Island	Rhode Island State Police (401) 647-3311
Authorized to Request Aid for Rhode Island	James E. Hickey Business Tel: (401) 277-2438, 2439 Home Tel: (401) 884-4732
	Charles McMahon Business Tel: (401) 277-2438, 2439 Home Tel: (401) 949-1274
	James Nolan Business Tel: (401) 277-2438, 2439 Home Tel: (401) 521-9539
	Santo Amato Business Tel: (401) 421-7156 Home Tel: (401) 351-5264

Business Hours: 8:30 - 4:30

VERMONT

Compact Administrator

Commissioner, Department of Health
Lloyd F. Novick, M. D.
Business Tel: (802) 862-5701

Director, Division of Occupational Health
Mars Y. Longley
Business Tel: (802) 476-3171, 3172

Raymond N. McCandless
Business Tel: (802) 476-3171, 3172
Home Tel: (802) 223-5075

David Scott
Business Tel: (802) 476-3171, 3172
Home Tel: (802) 767-3744

Larry Miller
Business Tel: (802) 476-3171, 3172
Home Tel: (802) 229-0858

Business Hours: 7:45 - 4:30

	LABORATORY EQUIPMENT				FIELD EQUIPMENT		
STATE	GROSS ALPHA	GROSS BETA	GAMMA SCAN	ALPHA	BETA GAMMA	G. M.	NEUTRON
MASS.	1 PC	1 PC 2 LBBC		5 Scintillation 0-2,000,000 cpm.	2 Jordan Radgun 0-10 KR/hr	1 Victoreen 440 0-300 R/hr.	1 Fast Neutron Survey Meter
				2 Juno Alpha, Beta, Gamma 0-25 R/hr	1 Victoreen 440RF 0-300 mR/hr	1 Victoreen 498 0-1 R/hr	
					1 Victoreen 470 0-1000 R/hr	12 Drill Hole 0-20 mR/hr	
					7 Cutie Pie Ion Chambers 0-250 R/hr		
					13 Ion Chambers 0-250 R/hr		

OTHER EQUIPMENT

Mass. - Pocket Dosimeters, Protective Clothing, Respirators, Hoods, Gloves, Decontamination Solutions, Marking Rope,etc.

APPENDIX II

	LABORATORY EQUIPMENT			FIELD EQUIPMENT			
STATE	GROSS ALPHA	GROSS BETA	GAMMA SCAN	ALPHA	BETA GAMMA	G. M.	NEUTRON
N. H.	1 PC	1 P C	1 128 Channel Analyzer	1 Gas Flow 0-100,000 cpm. 4 Scintillation 0-2,000,000 cpm.	5 Ion Chambers 0-500 R/hr 1 Scintillation 0-25 mR/hr	8 G. M. Counters 0-20 mR/hr	1 Neutron Counter
R. I.	1 PC	1 LBBC	1 400 Channel Analyzer	1 Scintillation 0-2,000,000 cpm.	1 N. C. #2568 0-2,500 mR/hr 3 CDV-715 1 Nucor CS-40 0-50,000 mR/hr 1 Victoreen Panoramic 0-1,000 R/hr 2 Victoreen R-meters 0-25 R 1 Eberline Geiger Counter 0-70,000 cpm. 1 Amperex Pancake Detector 0-70,000 cpm.	2 N. C. #2650 0-100 mR/hr 1 CDV-700	

OTHER EQUIPMENT

N. H. - 6 Hi-Vol Air Samplers, 3 Manual Air Samplers, 2 Electrostatic Air Samplers, 8 Pair Shoe Covers, 1 set Protective Clothing, Gloves, Respirator, Hood, 2 PIC, 1 Victoreen TLD, 1 Pressurized Ion Chamber, 1 TLD Reader, 1 Victoreen 550 Ion Chamber.

R. I. - 8 Hi-Vol Air Samplers, 1 Impactor Head Air Sampler, 1 Electrostatic Air Sampler, Protective Clothing and Decontamination Equipment available through C. D.

March, 1979

	LABORATORY EQUIPMENT			FIELD EQUIPMENT			
STATE	GROSS ALPHA	GROSS BETA	GAMMA SCAN	ALPHA	BETA GAMMA	G. M.	NEUTRON
CONN.	1 PC	2 LBBC	1 Single Channel Analyzer 1 Multi-Channel Analyzer 1 Tracor Northern TN 1700 Pulse Height Analyzer 1 Princeton Gamma Tech Ge-Li	4 Eberline PAC-15 0-2M cpm. (gamma 0-2 R/hr)	1 Victoreen 440 3 Baird Atomic 420 0-100 mR/hr 3 Victoreen Radgun 4 GB-10 0-10,000 R/hr	5 G. M. Survey Instruments	
MAINE	3 PC 1 LBPC	3 PC 1 LBBC	1 400 Channel Analyzer 1 1024 Channel Analyzer	1 Eberline	2 Cutie Pie Ion Chambers	6 G. M. Survey Instruments	

OTHER EQUIPMENT

Conn. - 1 Tri-Carb Liquid Scintillation Counter, 1 Johnson Radon Counting System, Pocket Dosimeters, Protective Clothing, 1 PIC.

Maine - 3 Hi-Vol Air Samplers, 1 TLD Reader (Eberline).

APPENDIX II

	LABORATORY EQUIPMENT				FIELD EQUIPMENT		
STATE	GROSS ALPHA	GROSS BETA	GAMMA SCAN	ALPHA	BETA GAMMA	G. M.	NEUTRON
VT.	1 PC	1 PC	1 Multi-Channel Analyzer	1 Scintillation Eberline PAC 1 SAG	3 Ion Chambers 0-50,000 mR/hr	2 G. M. Counters	1 Neutron Counter

OTHER EQUIPMENT

Vt. - Plastic Bags, Waste Storage Drums, Shoe Covers, 1 PIC, 1 TLD (EG&G), Pocket Dosimeters.
1-Tri-Carb Liquid Scintillation Counter, Model--Packard 3320, 1-Tracerlab Omni-Guard Low Background G.M. Counting System (alpha, beta).

COMMONWEALTH OF MASSACHUSETTS

INTERSTATE CIVIL DEFENSE COMPACT

I, Paul A. Dever, pursuant to the powers conferred on me by sections 4 and 6 of chapter 639 of the Acts of 1950 and all other powers do on behalf of the Commonwealth of Massachusetts enter into and ratify the following agreement with other contracting States which are now, or may hereafter become, parties thereto:

Article 1. The purpose of this compact is to provide mutual aid among the states in meeting any emergency or disaster from enemy attack or other cause (natural or otherwise) including sabotage and subversive acts and direct attacks by bombs, shellfire, and atomic, radiological, chemical, bacteriological means, and other weapons. The prompt, full and effective utilization of the resources of the respective States, including such resources as may be available from the United States Government or any other source, are essential to the safety, care and welfare of the people thereof in the event of enemy action or other emergency, and any other resources, including personnel, equipment or supplies, shall be incorporated into a plan or plans of mutual aid to be developed among the Civil Defense agencies or similar bodies of the States that are parties hereto. The Directors of Civil Defense of all party States shall constitute a committee to formulate plans and take all necessary steps for the implementation of this compact.

Article 2. It shall be the duty of each party State to formulate civil defense plans and programs for application within such State. There shall be frequent consultation between the representatives of the States and with the United States Government and the free exchange of information and plans, including inventories of any materials and equipment available for civil defense. In carrying out such civil defense plans and programs the party states shall so far as possible provide and follow uniform standards, practices and rules and regulations including:

(a) Insignia, arm bands and any other distinctive articles to designate and distinguish the different civil defense services;

(b) Blackouts and practice blackouts, air raid drills, mobilization of civil defense forces and other tests and exercises;

(c) Warnings and signals for drills or attacks and the mechanical devices to be used in connection therewith;

(d) The effective screening or extinguishing of all lights and lighting devices and appliances;

(e) Shutting off water mains, gas mains, electric power connections and the suspension of all other utility services;

(f) All materials or equipment used or to be used for civil defense purposes in order to assure that such materials and equipment will be easily and freely interchangeable when used in or by any other party State;

(g) The conduct of civilians and the movement and cessation of movement of pedestrians and vehicular traffic, prior, during and subsequent to drills or attacks;

(h) The safety of public meetings or gatherings; and

(i) Mobile support units.

Article 3. Any party State requested to render mutual aid shall take such action as is necessary to provide and make available the resources covered by this compact in accordance with the terms hereof; provided that it is understood that the State rendering aid may withhold resources to the extent necessary to provide reasonable protection for such State. Each party State shall extend to the civil defense forces of any other party State, while operating within its State limits under the terms and conditions of this compact, the same powers (except that of arrest unless specifically authorized by the receiving state), duties, rights, privileges and immunities as if they were performing their duties in the State in which normally employed or rendering services, Civil Defense forces will continue under the command and control of their regular leaders but the organizational units will come under the operational control of the civil defense authorities of the State receiving assistance.

Article 4. Whenever any person holds a license, certificate or other permit issued by any State evidencing the meeting of qualifications for professional, mechanical or other skills, such person may render aid involving such skill in any party State to meet an emergency or disaster and such State shall give due recognition to such license, certificate or other permit as if issued in the State in which aid is rendered.

Article 5. No party State or its officers or employees rendering aid in another State pursuant to this compact shall be liable on account of any act or omission in good faith on the part of such forces while so engaged, or on account of the maintenance or use of any equipment or supplies in connection therewith.

Article 6. Inasmuch as it is probable that the pattern and detail of the machinery for mutual aid among two or more States may differ from that appropriate among other States party hereto, this instrument contains elements of a broad base common to all States, and nothing herein contained shall preclude any State from entering into supplementary agreements with another State or States. Such supplementary agreements may comprehend, but shall not be limited to, provisions for evacuation and reception of injured and other persons, and the exchange of medical, fire, police, public utility, reconnaisance, welfare, transportation and communications personnel, equipment and supplies.

Article 7. Each party State shall provide for the payment of compensation and death benefits to injured members of the civil defense forces of that State and the representatives of deceased members of such forces in case such members sustain injuries or are killed while rendering aid pursuant to this compact, in the same manner and on the same terms as if the injury or death were sustained within such State.

Article 8. Any party State rendering aid in another State pursuant to this compact shall be reimbursed by the party State receiving such aid for any loss or damage to, or expense incurred in the operation of any equipment answering a request for aid, and for the cost incurred in connection with such requests; provided, that any aiding party State may assume in whole or in part such loss, damage, expense, or other cost, or may loan such equipment or donate such services to the receiving party State without charge or cost; and provided further that any two or more party States may enter into supplementary agreements establishing a different allocation of costs as among those States. The United States Government may relieve the party State receiving aid from any liability and reimburse the party State supplying civil defense forces for the compensation paid to and the transportation, subsistence and maintenance expenses of such forces during the time of the rendition of such aid or assistance outside the State and may also pay fair and reasonable compensation for the use or utilization of the supplies, materials, equipment or facilities so utilized or consumed.

Article 9. Plans for the orderly evacuation and reception of the civilian population as the result of an emergency or disaster shall be worked out from time to time between representatives of the party States and the various local civil defense areas thereof. Such plans shall include the manner of transporting such evacuees, the number of evacuees to be received in different areas, and the manner in which food, clothing, housing and medical care will be provided, the registration of the evacuees, the providing of facilities for the notification of relatives or friends and the forwarding of such evacuees to other areas or the bringing in of additional materials, supplies, and all other relevant factors. Such plans shall provide that the party State receiving evacuees shall be reimbursed generally for the out-of-pocket expenses incurred in receiving and caring for such evacuees, for expenditures for transportation, food, clothing, medicines and medical care and like items. Such expenditures shall be reimbursed by the party State of which the evacuees are residents, or by the United States Government under plans approved by it. After the termination of the emergency or disaster the party State of which the evacuees are resident shall assume the responsibility for the ultimate support or repatriation of such evacuees.

Article 10. This compact shall be available to any State, territory or possession of the United States, and the District of Columbia. The term "State" may also include any neighboring foreign country or province or state thereof.

Article 11. The committee established pursuant to Article 1 of this compact may request the Civil Defense Agency of the United States Government to act as an informational and coordinating body under this compact, and representatives of such agency of the United States Government may attend meetings of such committee.

Article 12. This compact shall become operative immediately upon its ratification by any State as between it and any other State or States so ratifying and shall be subject to approval by Congress unless prior Congressional approval has been given. Duly authenticated copies of this compact and of such supplementary agreements as may be entered into shall, at the time of their approval, be deposited with each of the party States and with the Civil Defense Agency and other appropriate agencies of the United States Government.

Article 13. This compact shall continue in force and remain binding on each party State until the legislature or the Governor of such party State takes action to withdraw therefrom. Such action shall not be effective until 30 days after notice thereof has been sent by the Governor of the party State desiring to withdraw to the Governors of all other party States.

Article 14. This compact shall be construed to effectuate the purposes stated in Article 1 thereof. If any provision of this compact is declared unconstitutional, or the applicability thereof to any person or circumstance is held invalid, the constitutionality of the remainder of this compact and the applicability thereof to other persons and circumstances shall not be affected thereby.

Given at the Executive Chamber in Boston this third day of January, in the year of our Lord, one thousand nine hundred and fifty-one, and of the Independence of the United States of America the one hundred and seventy-fifth.

S/ Paul A. Dever

By His Excellency the Governor

S/ Edward J. Cronin
Secretary of the Commonwealth

I hereby certify that the foregoing is a true copy of the compact on deposit in the archives of the Commonwealth.

(Seal)

Witness the Great Seal of the Commonwealth

S/ Edward J. Cronin

Edward J. Cronin
Secretary of the Commonwealth

ANNEX 7 FEDERAL RADIOLOGICAL EMERGENCY RESPONSE ASSISTANCE

A. INTRODUCTION

This Annex establishes responsibilities and outlines tasks and procedures associated with requesting and utilizing radiological assistance resources available from the Federal government. All other types of Federal assistance required during a radiological emergency should be requested in accordance with the provisions of Part Two of the Massachusetts Comprehensive Emergency Response Plan.

B. REFERENCES

Massachusetts Comprehensive Emergency Response Plan, Part Two, Section Five, "Requests for Federal Assistance"

Facility Emergency Response Plans

C. RESPONSIBILITIES

1. Massachusetts Department of Public Health (DPH)

DPH responsibilities include:

a. Determining, on behalf of the State, that Federal radiological emergency response is necessary;

b. Maintaining liaison with the Department of Energy (RAP and IRAP programs) and with the NRC;

c. Request appropriate radiological assistance from the Brookhaven IRAP team;

d. Maintain liaison between IRAP teams and DPH and other State agencies through the DPH representative at the utility ECC or its alternate;

e. Maintain liaison, on behalf of the State with IRAP coordinator in the MCDA EOC in Framingham through its representative at the Framingham EOC.

2. Massachusetts Civil Defense Agency (MCDA)

MCDA is responsible for coordinating the logistical support necessary to support NRC or IRAP teams in their accident assessment and other assistance efforts.

3. Nuclear Regulatory Commission (NRC)

The NRC is responsible, during a radiation emergency, for conducting investigative activities associated with the incident, verifying that emergency plans and procedures have been implemented, and assuring, from the perspective of a Regulator of the facility that the public health and safety are protected.

NRC will assist in coordination of Federal response resources, and provide advisory assistance, associated with investigating and assessing hazards to the public, to State and local agencies.

4. Radiological Assistance Program (RAP) and Interagency Radiological Assistance Program (IRAP)

U.S. Department of Energy RAP and IRAP resources are available to assist in radiological emergencies in Massachusetts through its Brookhaven National Laboratory Area office is responsible for responding to requests for radiological assistance from NRC licensees, and State or local agencies. Such assistance includes monitoring the environs of the facility, and providing field measurements of actual dose rates and airborne radioactivity concentrations.

D. PROCEDURES

1. Requests for Assistance

The IRAP team from Brookhaven will mobilize and respond to a call from the facility operator for assistance. They will maintain liaison with the Emergency Duty Officer and have their activities coordinated by him during the primary assessment phase (if they arrive on time for this).

The IRAP team will also respond to a request for assistance from the Department of Public Health. If already in the area in response to a request from a facility, they will transfer their liaison for the secondary phase to the Department of Public Health, and perform through its coordination.

2. Nature of Assistance

The IRAP team will supply field survey results to the facility during the primary phase of accident assessment, and to the Department of Public Health during the secondary phase of assessment. Upon request, the IRAP team will also provide:

a. air, water and other monitoring

b. laboratory radiochemical analysis

c. medical advice

d. decontamination advice

IRAP team capabilities are described in Attachment B.7-1, "Radiological Assistance Program".

3. Coordination and Logistics Support

a. Coordination with available Federal personnel will be assured through liaison provided by the Department of Public Health at the facility Emergency Coordination Center, or its alternate; and at the State Emergency Operating Center in Framingham.

b. Logistical support, including housing, transportation, communications, etc., will be provided by the Massachusetts Civil Defense Agency upon request by the Department of Public Health DPH Coordinator stationed there.

January 1975

RADIOLOGICAL ASSISTANCE PROGRAM

ADMINISTERING AGENCY	The U. S. Energy Research and Development Administration (ERDA)
AUTHORIZATION FOR RADIOLOGICAL ASSISTANCE ACTIVITIES	A. The Energy Reorganization Act of 1974 and the Atomic Energy Act of 1954, as amended, which provide for protecting the health and safety of the public from hazards that may arise during the development, use, and control of nuclear energy. B. The Interagency Radiological Assistance Plan (IRAP), to which the ERDA is a signatory agency, assigns to the ERDA the responsibility for overall implementation of the plan.
ELIGIBILITY FOR ASSISTANCE	Any person or organization aware of an incident believed to involve a hazard from radioactive material may request radiological emergency assistance. Also available upon request is information and other appropriate assistance to aid in the development of radiological emergency response plans and capabilities.
TYPES OF ASSISTANCE AVAILABLE	A. Radiological emergency assistance teams for dispatch on short notice to the scene of a radiological incident to identify and assess the hazards; advise on emergency operations to save life, minimize injury, and protect health, safety and property; and assist as may be necessary. B. Technical, scientific and medical advice on health and safety problems resulting from radiological incidents. C. Publications, movies, expert advice and information applicable to the development of radiological emergency response plans and capabilities.
WHERE TO REQUEST RADIOLOGICAL ASSISTANCE	A. ERDA Regional Coordinating Offices and other ERDA offices (see attached list) will receive telephone requests for radiological emergency assistance 24-hours a day and will initiate the assistance most appropriate to the incident conditions. Other Federal agencies signatory to the IRAP will respond at the request of ERDA Regional Coordinating Offices. They may also respond independently in accordance with their own procedures if they receive the initial request for assistance. B. State radiation control, civil defense, health and police agencies will respond to requests for emergency assistance and have access to Federal assistance through ERDA Regional Coordinating Offices and through arrangements they may have with specific Federal agency field offices.

RADIOLOGICAL INCIDENT REPORTS	A. Report all incidents involving radioactive material identified as ERDA or ERDA contractor material to the nearest ERDA office. B. Report incidents believed to involve a nuclear weapon, weapon component or nuclear explosive to: 1. the ERDA Albuquerque Operations Office, Albuquerque, New Mexico (phone 505-264-4667) or 2. the nearest military installation. C. Report other incidents involving ionizing radiation sources to the nearest ERDA office, military installation, or state radiation control, civil defense, police or health agency.
PUBLICATIONS APPLICABLE TO RADIOLOGICAL ASSISTANCE ACTIVITIES	A. Interagency Radiological Assistance Plan. Request from Division of Operational Safety, ERDA, Washington, D. C. 20545. Free B. Map of ERDA Regional Coordinating Offices for Radiological Emergency Assistance and their Geographical Areas of Responsibility. Request from Division of Operational Safety, ERDA, Washington, D. C. 20545. Free C. Emergency Action Guidelines for Incidents Involving Radioactive Material. Request from Division of Operational Safety, ERDA, Washington, D. C. 20545. Free D. Technical Information Bulletin on Atomic Weapons Accident Hazards, Precautions and Procedures (prepared Jointly by The Department of Defense and United States Atomic Energy Commission). Request from Division of Operational Safety, ERDA, Washington, D. C. 20545. Free E. Radiological Emergency Operations Course Instructor's Manual, TID-24918 and Radiological Emergency Operations Course Student's Manual, TID-24919. For sale by the Clearinghouse for Federal Scientific and Technical Information, National Burear of Standards, U. S. Department of Commerce, Springfield, Virginia 22151. Price $3.00 per copy of each manual. F. Radiological Emergency Procedures for the Non-Specialist. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. Price 50¢.
ADDITIONAL INFORMATION	For additional information and guidance regarding radiological assistance policies, plans, and activities, contact AEC field offices or write to the Director, Division of Operational Safety, Energy Research and Development Administration, Washington, D. C. 20545. (See attached list of ERDA office addresses and telephone numbers to call for radiological emergency assistance and for information on radiation protection.)

Energy Research and Development Administration
Regional Coordinating Offices for Radiological Assistance

Region	Mailing Address	a. Emergency Number b. Information Number
1 Connecticut Delaware District of Columbia Maine Maryland Massachusetts New Hampshire New Jersey New York Pennsylvania Rhode Island Vermont	Brookhaven Area Office Upton, L. I., New York 11973	a. 516-345-2200 b. 516-345-3427
2 Arkansas Kentucky Louisiana Mississippi Missouri Puerto Rico Tennessee Virgin Islands Virginia West Virginia	Oak Ridge Operations Office Post Office Box E Oak Ridge, Tennessee 37830	a. 615-483-8611 ext. 34510 b. 615-483-4633
3 Alabama Canal Zone Florida Georgia North Carolina South Carolina	Savannah River Operations Office Post Office Box A Aiken, South Carolina 29801	a. 803-824-6331 ext.3333 b. 803-824-6331 ext. 2688
4 Arizona Kansas New Mexico Oklahoma Texas	Albuquerque Operations Office Post Office Box 5400 Albuquerque, New Mexico 87115	a. 505-264-4667 b. 505-264-7877

5 Illinois Indiana Iowa Michigan Minnesota Nebraska North Dakota Ohio South Dakota Wisconsin	Chicago Operations Office 9800 South Cass Avenue Argonne, Illinois 60439	a. 312-739-7711 ext. 2111 duty hours ext. 4451 off hours b. 312-739-7711 ext. 2165
6 Colorado Idaho Montana Utah Wyoming	Idaho Operations Office Post Office Box 2108 Idaho Falls, Idaho 83401	a. 208-526-0111 ext. 1515 b. 208-522-6640 ext. 1647
7 California Hawaii Nevada	San Francisco Operations Office 1333 Broadway Oakland, California 94612	a. 415-273-4237 b. 415-273-4110
8 Alaska Oregon Washington	Richland Operations Office Post Office Box 550 Richland, Washington 99352	a. 509-942-7381 b. 509-942-7355

Other ERDA Offices

Grand Junction Office Post Office Box 2567 Grand Junction, Colorado 81501	a. 303-242-8621 Ask for appropriate contact. b. 303-242-8621 Ext. 8239
Nevada Operations Office Post Office Box 14100 Las Vegas, Nevada 89114	a. 702-734-3343 all hours b. 702-734-3181
Pittsburgh Naval Reactors Office Post Office Box 109 West Mifflin, Pennsylvania 15122	a. 412-462-5000 Ask for appropriate contact. b. 412-462-5000, Ext. 6618
Schenectady Naval Reactors Office Post Office Box 1069 Schenectady, New York 12301	a. 518-393-6611 Ask for Patrol Headquarters b. 518-393-6611 Ext. 7568

ANNEX 8 TRAINING AND EXERCISES

A. INTRODUCTION

This Annex establishes responsibilities and outlines tasks and procedures associated with radiological emergency response exercises, drills and training.

B. APPLICABILITY

The provisions of this Annex are applicable to all State and local departments and agencies with radiological emergency response functions, private agencies, and nuclear facility operators.

C. REFERENCES

Massachusetts Comprehensive Emergency Response Plan, Annex J, Plan Implementation, Updating and Training

Emergency Response Planning Exercises, Science Applications, Inc., 1979

Vermont Yankee Nuclear Power Corporation Emergency Plan

D. RESPONSIBILITIES

1. General

The general responsibilities associated with radiological emergency response training and exercises will be consistent with responsibilities assigned in Annex J to the Massachusetts Comprehensive Emergency Response Plan.

2. Massachusetts Civil Defense Agency (MCDA)

MCDA responsibilities include:

a. Development and conduct of training programs to familiarize response personnel with this plan and its procedures;

b. Development and conduct of drills and exercises to test and upgrade radiological response capabilities;

c. Development and conduct of radiological monitoring training tailored to peacetime nuclear response incidents.

3. Massachusetts Department of Public Health (DPH)

DPH responsibilities include:

a. Development of accident scenario sections of exercise scenario;

b. Provision of training in monitoring and assessment techniques to Nuclear Incident Advisory Team (NIAT) members, and assisting in the training of other response personnel in radiation monitoring and protection;

c. Coordinating the training and exercise of medical and hospital personnel.

4. Other State and Local Agencies

Other State and local agencies are responsible for participating, upon request, in scheduled training and radiological response exercises, providing qualified observers when requested, and assisting in exercise conduct and critiques.

5. Facility Operators

Facility operators are responsible for the annual conduct of a radiation emergency site exercise, and for notification and invitation to participate to State Public Health and Civil Defense officials.

E. PROCEDURES

1. Schedules

a. State agencies will participate in each of the three annual exercises held by facility operators each year. Local participating for all cities and towns within ten miles of the facility, and reception communities will be invited.

b. Annually, either in conjunction with a facility exercise or independently, a drill or exercise of all or parts of this plan will be conducted. This exercise will involve full-scale table top and/or field exercises.

c. Operations and monitoring training will be conducted in accordance with the Civil Defense biannual training schedule (Attachment B8-1 to this Annex).

2. Scenarios

a. Facility operators shall provide exercise scenarios to State Public Health and Civil Defense officials in accordance with facility emergency response plans. (See Attachment B8-2, Vermont Yankee "Radiation Emergency Drill Planning Form").

b. Annual State exercise scenarios will be developed in accordance with the principles and procedures developed by Science Applications, Inc., and reflected in Emergency Planning Response Exercises. (See Attachment B8-3, "Exercise Information Sheet").

3. Critique and Follow-up

Civil Defense will provide for critique of the annual exercise by qualified independent observers, and for follow-up of observer comments, in accordance with procedures illustrated by Attachment B8-4. Federal officials and members of the Governor's Advisory Council on Radiation Protection, as well as officials of other involved State agencies, will participate as observers.

4. Area and Local Exercises

Area exercises, in conjunction with localities, will be consistent with standard Massachusetts Civil Defense exercise procedures, as reflected in Attachment B8-5.

Local governments may either participate in State and facility exercise, or develop their own exercises in accordance with local plans.

5. Federal Training

The Massachusetts Civil Defense Agency will inform localities and other State agencies of pertinent Federal radiological response and assessment training, and coordinate participation in such training by State and local personnel.

Attachment B.8-1
Page 1 of 1

MCDA TRAINING PROGRAM - FY80

ACTIVITY	DATE	NO. OF STUDENTS
Emergency Operations Simulation - Area 3	October 1, 1979	30-33
R.D.O. Basic - Area 2	October 20-21-27-28	30-40
Phase II - Area 1	October 29-30-31, November 1-2	25-30
Radiological Defense Instructor Workshop - Area 2	November 3	20-25
Emergency Operations Simulation - Area 3	November 5	25-30
R.D.O. Basic - Area 2	November 10-11-17-18	30-40
N.C.P. Seminar - Statewide Military	November 28-29	40-50
Radiological Defense Instructor Workshop - Area 2	December 1-2-8-9	20-25
Shelter Management - Area 1	December 3-4	25-30
Emergency Operations Simulation - Area 3	December 3	25-30
Advance Seminar - Area 1	December 13	25-30
E.O.S. Executive Order #144 Personnel - Statewide	January 16, 1980	50-60
Public Officials Conference - Area 2	February 14	150-175
R.D.O. Instructor Workshop - Area 2	February 16-17-23-24	20-25
Public Officials Conference - Area 2	February 21	150-175
Public Officials Conference - Area 2	February 28	150-175
R.D.O. Basic - Area 3	March 1-8-15-22	20-22
Emergency Operations Simulation - Area 3	March 3	25-30
Emergency Operations Simulation - Area 4	March 19	25-30
Emergency Operations Simulation - Area 3	April 3	25-30
Plans & Operations Workshop - Area 2	April 10	150-175
Plans & Operations Workshop - Area 2	April 17	150-175
Advanced Seminar - Area 1	April 17	30-35
N.C.P. Seminar - Area 4	April 23-24	40-50
Plans & Operations Workshop - Area 2	April 24	150-175
E.O.S. - Area 3	May 5	25-30
Public Officials Conference - Area 4	May 6	35-40
Emergency Operations Simulation - Area 2	May 8	150-175
Emergency Operations Simulation - Area 2	May 15	150-175
Advanced Seminar - Business & Industry - Area 1	May 16	200
N.C.P. Seminar - Area 4	May 21-22	40-50
Emergency Operations Simulation - Area 2	May 22	150-175
Emergency Operations Simulation - Area 3	June 2	25-30
N.C.P. Seminar - Area 2	June 7	150-175
Advanced Seminar - Area 3	June 10	40-50
N.C.P. Seminar - Area 4	June 18-19	40-50
Public Officials Conference - Area 1	June 20	100-150
Basic Seminar - Area 1	September 12-13-14	25-30
Public Officials Conference - Area 3	September 16	40-50
Emergency Operations Simulation Executive Order #144 - State E.O.C.	September 17	50-60
N.C.P. Seminar - Area 2	September 27	150-175

RADIATION EMERGENCY DRILL PLANNING FORM

1.0 DATE AND TIME OF DRILL:

The Vermont Yankee Annual Evacuation Drill be conducted on

2.0 DESCRIPTION OF SIMULATED ACCIDENT:

a. A hypothetical accident consisting of a Main Steam Line Break as discussed in FSAR Section 14.6.5.

b. Isolation valves close about 5.5 seconds.*

c. 31,440 lbs. of reactor water and steam in the turbine building.

d. Railroad bay door is open and pressure rise has opened several seams on exterior walls.

3.0 DATA FOR INSTRUMENT RESPONSES, ACTIONS AND INFORMATION FOR SIMULATED EVENTS:

a. Total release of noble gases from turbine building: 3.0 Ci

b. Total release of I_{131} from turbine building: 1.1 Ci

c. Release point: ground level

d. Wind Speed: 8 mph (3.6 m/sec)

e. Wind Direction: Southeast (to Northwest)

f. ΔT: as read

g. Duration of Accident: Noble gases are released in 30 minutes.
Iodines are released in 120 minutes.

h. Radiation levels - Onsite
Stack monitors - As read
Site boundary - See Attachment #1
Turbine Building - See Attachment #2
In-plant (other than accident area) - as read

i. Radiation levels - Offsite

Country Store (Guilford): See Attachment #3.
Barns on right of route 142,: See Attachment #4.
(1¼ miles north of 142 and
Governor Hunt Road intersection.
First buildings on right north of
Cersossimo's plant)

*0.5 Sec added for electronic response times.

j. Missing Personnel:

   1) Two men injured: One man with burns on face and hands, mild shock. The other man with a sprained ankle.

   2) Hospitalization is required; however rescue and hospital will not participate in this drill.

   3) Contamination level is 30 mrem/hr at 2 inches from both injured persons.

      NOTE: After the missing persons have been treated by the plant medical team and decontaminated, this portion of the drill will be terminated.

4.0 SIMULATION LIST (ITEMS THAT WOULD BE ACCOMPLISHED IN AN EMERGENCY, BUT WILL NOT BE CARRIED OUT FOR THE DRILL):

a. Control Room personnel will not trip the plan but will simulate all actions as required by assumed control panel indications.

b. Offsite monitoring teams and security boundary monitoring personnel will not wear protective clothing and/or respirators.

c. Written reports required by NRC or other agencies will not be prepared.

d. Onsite and offsite radiation levels will be simulated.

e. One security guard will remain at inner gate to maintain normal security.

f. One secretary will remain on the switchboard.

g. The Search and Rescue Team actions will terminate after the missing contaminated persons have been "decontaminated".

h. The inner gate and electrically controlled doors will not be left in the open position during this drill.

i. Plant personnel and contractors not directly involved in the exercise will be allowed to return to work after the missing persons have been located and removed from the plant to the ECC.

j. The exercise will terminate as soon as the offsite monitoring teams have reported the results of their survey to the Emergency Coordination Center and the Emergency Coordinator declares the exercise complete.

k. Those persons designated as exercise observers will not be required to participate in the simulation. Observers will wear arm bands for identification purposes only.

l. The representatives from the offsite agencies will not be issued personnel radiation monitoring equipment except when they may enter the plant proper.

m. For the purposes of this exercise, smoking and drinking coffee will be allowed in the Coordination Center.

n. For the purposes of this exercise, only a spot check for contamination will be conducted at the assembly point. However, all personnel and vehicles leaving the plant site will be monitored.

o. Wind direction and wind speed are simulated for exercise purposes.

5. SELECTION OF EXERCISE AUDITORS: (Subject to Change

Name	Title	Assigned Post
		Control Room
J. MacDonald	Rad. Prot. Mgr.	Coordination Center
N. Panzarino	Engineer	Coordination Center
J. Parillo	Engineer	Offsite Team
	Engineer	Offsite Team
K. Kniskern	Security Advisor	Security
W. Cash	Engineer	Security - (Monitoring)
D. Helton	Engineer	H. P. Actions
		Search and Rescue Team

6.0 SPECIAL INSTRUCTION TO AUDITORS:

a. Pre-drill meeting will be held on at 1500 in the Information Center.

b. Observe communications procedures.

c. Keep a time log of events started ad completed.

d. Observe and record response of individuals, teams and use of equipment in accordance with established procedures.

e. All observers in position ten minutes prior to the time of the exercise.

f. At conclusion of exercise, complete observers critique sheet and be prepared to present comments at the critique.

g. Turn all critique sheets in to B. Ball prior to leaving plant site.

7.0 PRE-DRILL NOTIFICATION OF OFFSITE AGENCIES:

a. Yankee Mutual Assistance

Person contacted:__________________Date___________________________
Degree of Participation/Agreement letter:___________________________
__________________________________Initials___________________________

Attachment B.8-3
Page 1 of 1

EXERCISE INFORMATION SHEET

ME	PLANT STATUS	PLUME STATUS	LOCAL FACTORS	OTHER CONSIDERATIONS
-1:00	• plant is at full power • stable meteorology (sky is overcast, no precipitation) • reactor containment purge in progress for anticipated entry			
0:00	• plant experiences a primary pipe rupture • emergency core cooling actuated automatically • reactor is shut down	• wind is 4 mph from (direction)	• school bus tour of visitor center in progress • if multi-unit site, other unit(s) are: (pick one) operating, shut down or under construction. (#) workers are onsite	• nearby tourist attractions (beaches, campsites, or ________) are at ____% capacity
0:05	• radiation monitors inside containment confirm release of activity to containment • containment isolation is not verified; pressure is above atmospheric and well below design pressure • operators confirm that reactor is shut down, but containment is not isolated and are experiencing difficulties in maintaining adequate core cooling flow		• shift supervisor notifies local officials of accident	
0:12	• containment radiation monitors have shown increasing levels • fuel cladding rupture presumed based on fuel temperatures • containment isolation is still not verified	• outside radiation monitor near plant (at 0.75 miles) indicates (_____)Rem/hr WB in (direction) sector	• shift supervisor advises sheltering/evacuation be initiated	
0:15	• wind remains at 4 mph from (direction)	• radiation levels vs distance vs time off-site available on attached figures. Specific values to be provided to monitoring team upon arrival in proper sector		
0:30	• emergency core cooling properly restored and containment isolation is verified	• release terminated • 1/2 hour release of radioactivity confirmed • leading edge of plume is 2 miles from plant		
1:00	• on-site emergency plan is operational			
1:30				• NRC staff informs ______ that National Weather Service confirms that site meteorology is being experienced in the general vicinity (within 10 miles)
2:00			• Local journalist asks "what is really going on?" and requests permission to visit site and interview operators/workers	
2:15	• utility announces via press release that accident has taken place, releases exceeded allowable technical specifications, plant is under control			
2:20		• wind has shifted direction by 90° and is now 6 mph from the (direction).		
2:30	• plant supervisor calls for reinforcements from corporate headquarters			• inquiries from contiguous counties, cities and states; offers of assistance made
3:00	• recirculation mode initiated			• National Weather Service advises that wind shift has been experienced in the area and is expected to continue for at least 18-24 hours, the wind is generally stable and from the (direction).
3:15	• auxiliary operator injured (broken leg) and contaminated with coolant			
:00	• no further releases anticipated • plant is under control and core is cooling down • site personnel in recovery and re-entry plan • additional personnel from utility start arriving at plant at rate of 10/hour			

RADIATION EMERGENCY EXERCISE

INITIATION FORM

DESCRIPTION OF SIMULATED INCIDENT (Specify incident, actions that may have occurred, responses and alarms of specific instruments, malfunctioning equipment, incapacitated personnel, etc.):

PERSON TO WHOM FORM IS TO BE ISSUED:

Name______________________________ Title______________________

INITIATION OF DRILL:

Date_________________ Time_______________

APPROVAL:

Plant Superintendent__________________________ Date______________

RADIATION EMERGENCY EXERCISE

AUDITOR EVALUATION FORM

____
Date

Observer: __________________ __________________
Name Date

Exercise Title: __________________

Exercise Start: __________________ Time Initial Required Action Initiated: __________

Time Initial Required Action Completed: __________ Time Exercise Finish: __________

Location of Observer: __________________

Information Provided to Participants: __________________

Time Information Provided: __________

Observations: (Proper use of equipment, correct procedures, effectiveness of individual and group action, etc.)

Comments and Recommendations (Specific): __________________

Use additional pages as required. __________________ __________
Signature Date

RADIATION EMERGENCY EX E DOCUMENTATION FORM

EMERGENCY EXERCISE FOLLOW-UP ACTIONS

RESULTING FROM

COMMITMENTS (C), OBSERVER COMMENTS (OC), RECOMMENDATIONS (R), ETC.

Page _____

Date__________

No.	Category	Comments/Recommendations (Include all)	Management Position (Explain Rejections)	Assigned Responsibility	Scheduled Completion	Completion

MASSACHUSETTS CIVIL DEFENSE AGENCY
AND OFFICE OF EMERGENCY PREPAREDNESS
AREA II
P. O. Box 54, Bridgewater, Mass. 02324

EDWARD J. KING
GOVERNOR

ROBERT H. CUNNINGHAM
STATE DIRECTOR

AREA-LOCAL LETTER #79-7

April, 1979

STANDARDS

"BEAUFORT '79"

AREA II - 1979 - NATURAL DISASTER (HURRICANE)

CONTROL CENTER EXERCISE (CCX)

DATE: SATURDAY, 9 JUNE 1979 TIME: BETWEEN 0900 and 1130 HOURS

JOHN L. LOVERING
AREA II DIRECTOR

FRANCIS J. WILLARD
SECTOR DIRECTOR

GAIL E. LANGLOIS
ADMINISTRATIVE ASSISTANT

BERNARD P. LACOUTURE
OPERATIONS OFFICER

EDWARD H. ROBERTS
INTELLIGENCE OFFICER

DANIEL A. WELCH
RESOURCES OFFICER

FREDERICK WASTI
COMMUNICATIONS
SECTOR RADIO OFFICER

GEORGE F. McGOUGH
SECURITY OFFICER

EUGENE C. CRONIN
RADIOLOGICAL DEFENSE OFFICER

ROBERT L. GIBBONS
COMMUNICATIONS DIRECTOR

ROBERT THOMPSON
COMMUNICATIONS
SECTOR RADIO OFFICER

RAMANTIS A. BAJERCIUS
COMMUNICATIONS

PHIL CURRAN
COMMUNICATIONS

THOMAS FAIR
NATIONAL WEATHER SERVICE ADVISOR

PAGES 1 - 13

STANDARDS FOR PARTICIPATION

AREA II - 1979 - NATURAL DISASTER (HURRICANE)

CONTROL CENTER EXERCISE (CCX)

"BEAUFORT '79"

I. DESCRIPTION

A. The Code Name "Beaufort '79" has been assigned to the 1979 Area II Natural Disaster Control Center Test Exercise (CCX).

B. The exercise will commence on Saturday morning, 9 June 1979, at 0900 hours and end at approximately 1130 hours.

C. The problems presented for the exercise will cover a simulated twenty-four hour period. The exercise will involve Control Center Personnel at the Area/Sector and Community levels only. There will be no public participation in "Beaufort '79".

II. OBJECTIVE

A. The objective of the exercise is to evaluate the current state of readiness and operational capability of each community in Southeastern Massachusetts to mitigate the effects of a major hurricane subjecting the area to high velocity winds, inland and coastal flooding, debris strewn highways and roads, a tidal surge and major power outage. Each community's ability to adequately respond to an accident involving radioactive waste will also be tested.

III. SCENARIO

A. In accordance with normal hurricane alerting procedures, your community would have received these messages prior to the entrance of the hurricane in to our Area:

1. "Hurricane Watch" will be received when it is possible but not imminent that hurricane conditions will occur in the area covered by the Watch. Communities in the area should listen for further advisories and be prepared.

2. "Hurricane Warnings" will begin when the hurricane passes 35 Degrees North Latitude (off North Carolina), heading in our direction, and periodically thereafter until the danger has passed. When the first warning is received, the elements of the State Agency will be placed on Standby.

When the hurricane reaches a point 40 Degrees North Latitude and within an area bound on the east by 67 Degrees West Longitude and on the west by 75 Degrees West Longitude (east of New Jersey) you will be informed that the elements of MCDA are Operational. Likewise, each community should maintain the same readiness posture as the State Agency

III. SCENARIO (continued)

B. For the purpose of this exercise, it will be assumed that the preceding warnings have been sent and that your Emergency Operating Center (EOC) has been activated and fully staffed and Hurricane "Beaufort '79" with winds of 115 - 125mph has passed over Area II rendering to:

1. Buzzards Bay and the south coast of Cape Cod and the Islands - a tidal surge of near twenty feet (20') over and above normal high tide,

2. East coastal areas (Quincy to Plymouth) - a tidal surge of ten feet (10') over normal high tide.

C. The following messages have been transmitted:

1. To all Communities: The Governor has declared a State of Emergency.

2. Request following information: (1) Deaths, (2) Injured, (3) Refugees housed, (4) Location of Refuge Centers, (5) Capability to receive additional refugees, (6) Equipment and personnel requirements.

D. It is assumed as this test begins that the hurricane has just cleared the northern portion of our Area. Adequate warnings of the approach of the hurricane were received locally through the National Warning System and all operational precautions have been carried out and public information via the news media has been disseminated.

The storm entered our Area from the southwest traveling in a northeast direction at twenty (20) miles per hour. The eye of the storm traveled in a straight line from Westport in the South to Cohasset in the North, depositing approximately eight to ten inches (8-10") of rain.

1. Coastal communities have experienced extensive damage due to surge, high winds and flooding of low-lying areas. Communities affected are Westport, Dartmouth, New Bedford (Hurricane Barrier closed), Fairhaven, Mattapoisett, Marion, Bourne, Falmouth, Mashpee, Barnstable, Yarmouth, Dennis, Harwich, Chatham, Provincetown and Truro. Also affected are Quincy, Weymouth, Hull, Cohasset, Scituate, Marshfield, Duxbury, Hingham, Kingston and Plymouth.

2. All inland communities have suffered severe wind and flood damage from heavy rain. Especially affected are Lakeville, Halifax, Pembroke, Hanover, Brockton, Abington and Norwell. Ninety per cent (90%) of all roads are blocked by fallen trees, utility lines and water.

3. Flash flooding has occurred along the following rivers affecting the communities located along their banks: Taunton River, Ten Mile River, Charles River, Neponset River, Acushnet River and Weweantic River.

III. SCENARIO (continued)

4. Routes 3, 24, 95, 25, 495, 195 are passable. Occasional debris may be encountered. Route 1 and secondary roads impassable.

National Guard is activated but needs your input to be of assistance.

All volunteer services are active, ie Red Cross, Salvation Army and Civil Air Patrol, etc.

USE YOUR IMAGINATION!!!

IV. SITUATION

A. Your community experiences flash flooding in low-lying coastal areas, rivers and streams and inland bodies of water with dams dangerously close to flood stage and as a result civil defense forces have been engaged in operational acitivity as the situation warrants. Evacuation of low-lying areas is still in progress. Total loss of power experienced and results in operational problems such as panic, vital facilities (without emergency power) being unable to operate, ie hospitals, nursing homes, pumping stations, etc. -- looting/vandalism, etc. In the instance where municipally owned power plants in operation, you are being heavily deluged with requests for assistance from adjacent communities. Telephone lines are jammed as a result of many requests from populace for information/assistance. During the height of the blackout, a truck carrying radioactive material, appropriately marked, tips over in your community. Dependence on local resources with identification of deficiencies is an essential element of the exercise.

V. CONDUCT OF THE EXERCISE

A. TYPE

A seminar-type testing (Annex A) of the coordinating capability of control center staffs to organize the community's resources effectively for the purpose of combating the effects of a hurricane.

B. SCHEDULE

Local Directors and their staffs will be briefed on the Standards in detail at the Area-wide meetings to be held April 19, 26 and 27, 1979. It will then be expected that local Civil Defense Directors will in turn brief their key Emergency Operating Center (EOC) staff personnel on the general conduct and Standards of the exercise some time during May. Date and place of local briefings will be reported to the Area Director prior to their being held. The day of the exercise, June 9, will involve the seminar-type testing of your emergency management capability in accordance with Annexes A and B of this document.

VI. PARTICIPATION

A. Area Headquarters, Bridgewater, MA, and all communities in Area II (SE,MA) will activiate their EOC's during the exercise.

B. Communities will carry out this exercise as outlined herein, act on radio messages received from Area/Sector, and perform any related activities considered necessary by local Civil Defense Directors. It is assumed that the community Civil Defense Director will have reviewed and updated his Natural Disaster Plan prior to the exercise.

C. During the course of the exercise, the Area will provide advise and assistance to communities upon request; Sector communicators will act as relay to Area and will send messages from the Area Headquarters as directed.

D. Area II EOC will be completely staffed and will test emergency operating capability on the basis of a seminar-type test, taking into consideration resource assistance which could be made available to support local needs. The Area II Director will provide overall coordination for the exercise and initiate any activities that would enhance the objective.

VII. COMMUNICATIONS

A. The primary means of communication will be by radio. Each level of operation will take maximum advantage of the Radio Amateur Civil Emergency Service (RACES) network which will be activated during this exercise. Emphasis should be placed on message writing (M-5 message form, Annex C), routing, and message center control. No reliance will be placed on land-line communication. It is important to keep in mind that because this is a seminar-type exercise the communications personnel at all levels of operation keep messages to a minimum unless absolutely necessary. The NAWAS and RACES networks will be utilized to signal the start and conclusion of the exercise.

B. Time scheduled for utlilization of RACES Network during exercise:

SECTOR	MODE	TIME
A	RACES 146.31 (FM) 146.91 (FM)	0900 - 1000 1000 - 1030 exclusive
B	RACES 146.265 (FM) 146.865 (FM)	0900 - 1000 1030 - 1100 exclusive
C	RACES 145.26 (AM)	0900 - 1130
D	RACES 146.265 (FM) 146.865 (FM)	0900 - 1000 1100 - 1130 exclusive

ANNEX A

SEMINAR-TYPE EXERCISE -- EXPLANATION

SEMINAR DEFINITION:

A seminar exercise is considered a controlled group discussion where participants are guided by a moderator in defining a problem, working out a solution to the problem by a round-table discussion and determining a course of action with the responsible officials.

SEMINAR PURPOSE

The primary purpose of seminar exercises is to offer the opportunity for persons in agencies with emergency responsibilities to examine related problems, isolate potential courses of action, and make decisions without the distraction of concurrent operational responses.

The Civil Defense Director and local officials should consider seminar exercising as a means to an end, not as the end in itself. After the participants have acquired sufficient training through the seminar exercise method, operational exercises involving field units would be in order.

RECORDING SEMINAR RESULTS:

During and immediately following the seminar discussion, it will be desirable to make a written record of the output of the session. This output will be in the form of conclusions concurred in, new problems raised, actions to be taken, responsibilities assigned and accepted, plans for future meetings of the seminar group or subgroups and follow-up dates for progress on assignments. If the record is as complete as it should be, it will serve as an excellent tool to update your overal disaster plan.

It is recommended that the person acting as moderator not try to keep a running account himself, but, rather arrange to have another person act as recorder during the session. Following the session, the moderator and the recorder can jointly draft the final record.

It is not a reporting form. It is a record for the local Civil Defense Director of what took place. The only reporting required is as specified in the Standards. However, it is recommended that a report outlining deficiencies encountered with corrective measures necessary be sent to your Chief Executive. A copy of this report should be sent to the Area Director (see Annex D).

ELEMENTS OF A SEMINAR:

THE FOLLOWING ELEMENTS COMPRISE THE MAIN POINTS IN A SEMINAR EXERCISE:

1. Assembling key officials,
2. Guidance of group discussion by the Seminar Moderator,
3. Use of pre-selected topics from the Seminar Questionnaire (Annex B),
4. Recording of pertinent information on each topic,
5. Definition of problem areas,
6. Discussion of alternate solutions for each problem area,
7. Deciding on courses of action to solve each problem,
8. Designation of follow-up responsibility for each course of action selected.

USING THE SEMINAR QUESTIONNAIRE:

A moderator should lead the discussions. Discussion should be preceded by a briefing from the Civil Defense Director on the situation. After introducing the participants to the situation, the Civil Defense Director should present the problems one at a time for group discussion. At the completion of discussion of each point, the comments of the group should be noted. Participant comments should be directed toward determining (1) present preparedness capability and (2) what you plan to accomplish before an actual disaster situation.

RECOMMENDED EOC STAFFING:

AD	ADMINISTRATION	RA	RADIOLOGICAL
CO	COMMUNICATIONS	RE	RELIGIOUS
DR	DIRECTOR	RS	RESCUE
ED	EDUCATION	ARC	RED CROSS
EN	ENGINEERING	RM	RESOURCES MANAGEMENT
FR	FIRE	SLA	SALVATION ARMY
IN	INDUSTRY	SH	SHELTER
YY	INTELLIGENCE	SU	SUPPLY
GC	LEGAL	TTC	TELEPHONE COMPANY
MP	MANPOWER	TR	TRANSPORTATION
HE	MEDICAL	UT	UTILITIES
OS	OPERATIONS	WA	WARNING
SA	POLICE	WT	WATER
PR	PUBLIC INFORMATION	WE	WELFARE

NOTE: In all reporting or message writing, use service abbreviation listed above.

ANNEX B

SEMINAR QUESTIONNAIRE

NOTE: These questions are provided to stimulate local staff action and interchange of ideas. They should be expanded upon as the local situation dictates.

1. Do you have an alerting plan for your emergency operating center (EOC) staff?

2. Is your Warning System adequate for the necessary alerting of the population (stationary and mobile)?

3. Does your Emergency Operating Center have all of the necessary physical elements in order that a Command Post staff can function?

4. Does your operations plan include standing operating procedures for the handling of a natural disaster, ie flooding--large-scale power failure--debris clearance.

5. In order of priority, what are the deficiencies in your operational procedures?

6. In order of priority, what are the deficiencies in your communications network?

7. What maps and charts are available in the EOC? What additional maps are needed?

8. How are the EOC personnel to be housed and fed under emergency conditions?

9. Are sufficient office supplies and equipment available in the EOC?

10. Are all staff positions manned with trained personnel sufficient in number for a twenty-four hour operation?

11. Which staff members are trained to operate in alternate staff functions?

12. Are all of your essential resource inventories up to date, on file at Area II and available at the EOC?

13. Do you have a plan of operation established between your organization and public utilities (power, gas, telephone, etc)?

14. Do you have an arrangement with the telephone company which would allow priority use of the telephone lines in your EOC?

15. Have you established liaison with local Red Cross Chapter and what is the name and telephone number of their representative?

16. Do you have emergency First Aid Stations designated and equipped?

17. Do you have trained "First Aid" personnel available or know where to contact a source for such personnel?

18. Do you have an updated listing of doctors and nurses in your community?

19. Do you have an Emergency Public Information program?

20. Who is your Public Information Officer?

21. Does the radio station/television station upon which you would depend have emergency power?

22. Have you ever advised the populace that each household or commercial building should have a battery operated radio? When was the last time you did this?

23. Have you ever advised the populace of general precautionary measures that they can take during any natural disaster contingency? Reference H-14, "In Time of Emergency".

24. Do you understand and know how to implement a precept of the National Guard's resources? (Reference Massachusetts General Laws)

25. Do you have a separate listing of the availability of water pumps from public and private sources?

26. Do you have a priority list for clearing blocked highways?

27. Have you designated emergency refuge areas for housing remedial evacuees?

28. Are the designated refuge areas adequately equipped to supply the necessities of life with an operating staff and in this case emergency power?

29. Do you have the capability to take in refugees from other communities?

30. Do you have an adequate supply of cots and blankets to equip your refuge areas? Do you have an alternate source?

31. Have you specifically identified those areas of your community which are flood prone?

32. If you do have flood prone areas or you are a coastal community, have you designated those areas which would require evacuation and does your operations plan include an alerting and evacuation procedure for those areas?

33. Do you have definitive knowledge of bodies of water having dams which could present a flooding problem?

34. Do you have a procedure for reaching isolated areas which might become hard to get to because of flooding/impassable roads?

35. Do you have a separate listing of mobile generators from public and private sources?

36. Do you have a priority list of facilities that may need emergency power? (Hospitals, nursing homes, emergency shelters, etc.)

37. Do you have a list of buildings having elevators?

38. Do you have a plan for extracation of trapped persons?

39. Does your police service have a community-wide plan for the control of looting?

40. Do you have an adequate supply of sandbags on hand? If not, what is your alternate source?

41. What is your source for dry ice and who will you contact if resource is necessary?

42. Are you knowledgeable and do you have an SOP for handling an accident involving radioactive materials?

43. What is NIAT and how should it be utilized?

COMMENT: EXPAND UPON THESE QUESTIONS AS LOCAL SITUATION DICTATES!

SPECIAL PROBLEM: A truck carrying radioactive material, appropriately marked, tips over in your community and is on fire. Explain in detail from start to finish the actions that you will take. Each step of Emergency Response should be detailed and fully explained to all first responding agencies, ie Police/Fire in your community. Please keep this procedure inhouse (it is not necessary to contact State Police) as the intention is solely to make sure local officials know how to handle situation and implement the Nuclear Incident Advisory Team Program (NIAT).

IMPORTANT!!!

ANNEX C

MASSACHUSETTS CIVIL DEFENSE AGENCY MESSAGE FORM M-5

CLASS		PRIORITY		
INCOMING	( )	DEFERRED	"D"	( )
OUTGOING	( )	ROUTINE	"R"	( )
INTERNAL	( )	PRIORITY	"P"	( )
		IMMEDIATE	"O"	( )
		FLASH	"Z"	( )

FROM ____________________
(AREA-SECTOR-LOCAL-OTHER)

ORIGINATORS MSG. NO. ____________

DATE ____________________

TO DIRECTOR ____________________ ATTENTION ____________________
(Area-Sector-Local-Other) (Service or Staff)

TEXT

TEST MESSAGE "BEAUFORT '79" REUR ____________________
(Absolutely necessary to state) (insert referenced Message Number)

TEST MESSAGE "BEAUFORT '79" TIME SIGNED ____________________
(Absolutely necessary to state)

DIRECTOR'S NAME ____________________
(Authority)

DO NOT TRANSMIT

MESSAGE PREPARED BY ____________________ TITLE ____________________

MESSAGE SENT (TRANSMITTED BY):
MESSENGER ( ) RADIO ( )
TELEPHONE ( ) TELETYPE ( )

OPERATOR'S NAME ____________________

TIME ____________________
(SENT-RECEIVED)

ANNEX D

COMMUNITY AFTER ACTION REPORT

TO

CHIEF EXECUTIVE

1. General Description of Program (Use elements of Paragraph IV):

2. Participation (Services represented and total of people):

3. Problems Considered and Staff Solutions Recommended:

   A. Problems Considered

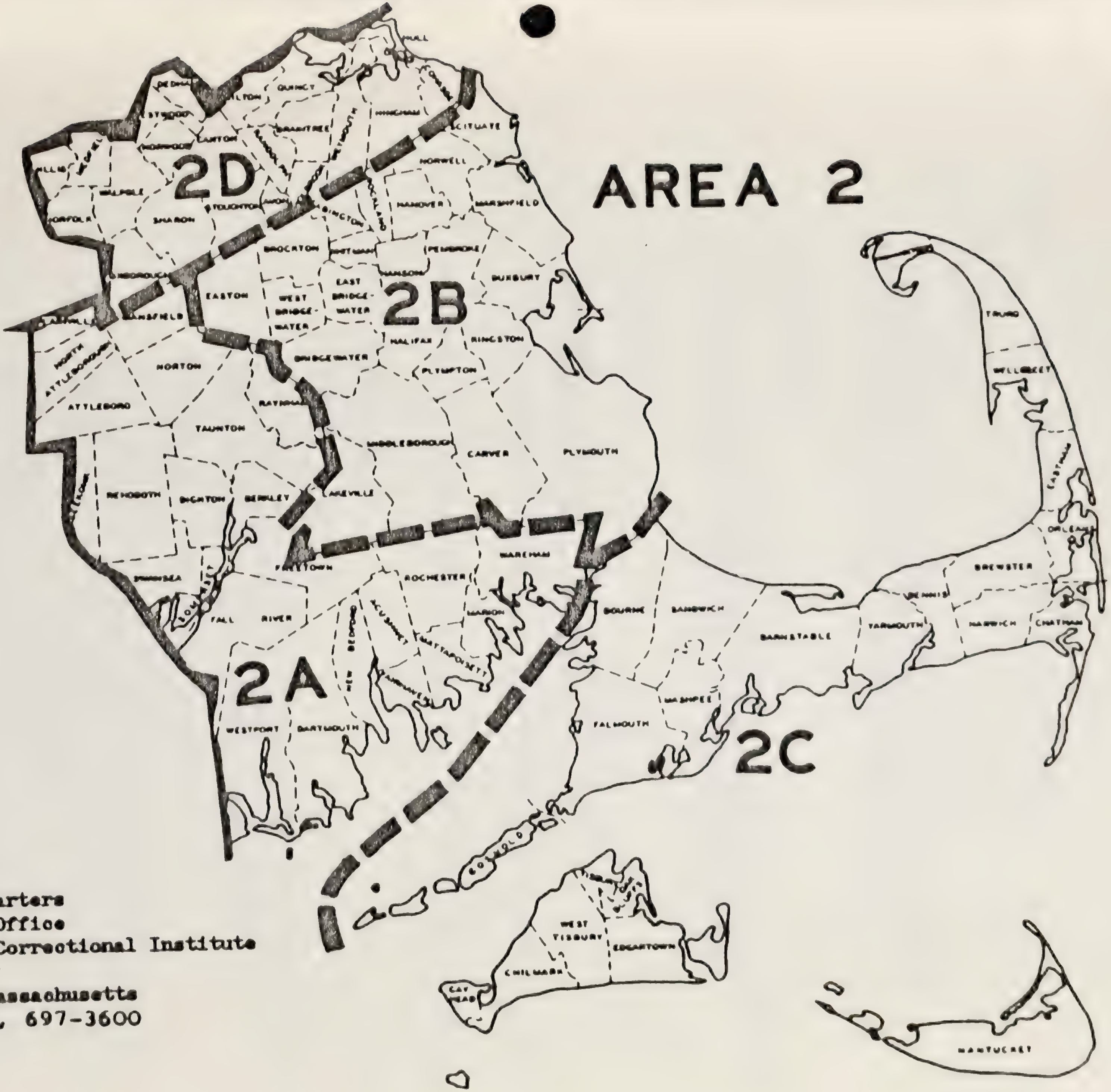
   B. Solutions

4. Deficiencies - Organizational/Operational Equipment:

5. Recommendations for Corrective Action:

Submitted by Civil Defense Director

CC - Area Director
Mail To: John L. Lovering, Director
Area II Headquarters
P. O. Box 54
Bridgewater, MA 02324



Area II Headquarters
Civil Defense Office
Massachusetts Correctional Institute
P.O. Box 54
Bridgewater, Massachusetts
Tel: 697-3111, 697-3600

ANNEX 9 PLAN MAINTENANCE AND DISTRIBUTION

A. INTRODUCTION

This Annex establishes responsibilities and outlines tasks and procedures associated with maintenance, review and updating of the Massachusetts Radiological Emergency Response Plan.

B. APPLICABILITY

The provisions of this Annex shall apply to all holders of controlled copies of the Massachusetts Comprehensive Emergency Response Plan which includes Appendix 3 -- Radiological Emergency Response Plan.

C. REFERENCES

Massachusetts Comprehensive Emergency Response Plan, Annex J, Plan Implementation, Updating and Training

Massachusetts Civil Defense Act of 1950 (Chapter 639, Acts of 1950, as amended.)

Massachusetts Energy Reorganization Act, effective January 1, 1980

D. RESPONSIBILITIES

1. General

Plan maintenance and distribution responsibilities will, in general, be consistent with the provisions of Annex J, of the Massachusetts Comprehensive Emergency Response Plan.

2. Massachusetts Civil Defense Agency

The Massachusetts Civil Defense Agency has a statutory responsibility (under the Massachusetts Energy Reorganization Act, effective January 1, 1980) for the annual review, updating, and publication of radiological emergency response plans. The Massachusetts Civil Defense Director shall assure that various plan components are reviewed each year, or the basis of new guidance received from the Federal government, and elsewhere; of information developed through emergency tests and exercises, and of advice from State agencies, cities and towns, and private organizations.

3. Massachusetts Department of Public Health (DPH)

In its role as lead agency in radiological emergency response, the Massachusetts Department of Public Health shall be responsible for providing relevant, up-to-date nuclear incident emergency planning information to medical support and other essential supporting organizations. Such information shall include guidance issued by the Nuclear Regulatory Commission, the Environmental Protection Agency, the Food and Drug Administration and other involved Federal agencies.

4. Other State Agencies

Other involved State agencies are responsible for advising the Massachusetts Civil Defense Agency through their respective Emergency Preparedness and Liaison Officers (Executive Order 144 assignees) of potential or existing situations which require modification to the plan, and for developing and improving agency-specific plan elements.

5. Local Governments

Local governments are responsible for updating local plans in accordance with local plan provisions, and for providing the Massachusetts Civil Defense Agency with approved changes to local plans.

6. Controlled Copy Planholders

"Controlled Copy" planholders are responsible for maintenance of controlled copies of this plan.

E. DISTRIBUTION

Appendix 3, Radiological Emergency Response Plan, is being produced in a modular fashion to permit distribution of only pertinent plan elements. Distribution will be as follows:

1. Local Government

One controlled copy to local Civil Defense Director of Sections A and B (State Plan and Annexes); Section C, D or E (pertinent Area Plan) and the relevant local plan from Section C, D or E.

Additional non-controlled copies of the same material will be distributed through local Civil Defense Directors for placement in public libraries, town halls, and other public places.

2. State Agencies

Key state agencies (State Police, Department of Public Health, Department of Environmental Quality Engineering, etc.) will receive and maintain controlled copies of the plan. All other Executive Order 144 assignees will receive non-controlled copies.

3. Federal Agencies

All Federal agency participants in the NRC concurrence process will receive and asked to maintain controlled copies of the plan.

F. EFFECTIVENESS

The provisions of this Annex are effective immediately, so as to provide a mechanism for maintenance and change of draft copies prior to promulgation of the plan.

G. PROCEDURES

1. Planning Information Distribution

The Department of Public Health will utilize internal standard operating procedures for distribution of nuclear incident emergency planning information.

2. Document Control

Procedures for document control appear as Attachment D-9-1 to this Annex.

9. When Document Control Form D, "Notice of Receipt," is returned by the document holder, record receipt on Document Control Form A, "Distribution List." Discard.

10. If a document holder fails to return his/her Document Control Form D, "Notice of Receipt," within thirty days, contact document holder to assure that the document change was received.

DOCUMENT CONTROL

Document Title: ______________________________

Document Distribution

1. An authorized request is submitted to send a copy of the document to individual/agency.

2. The individual's/agency's name is entered on Document Control Form A, "Distribution List."

3. A "copy number" is assigned to the copy of the document to be sent. This copy number should correspond with the number in the left column next to the individual's/agency's name on the distribution list.

4. The document is sent. [Note: Record date of distribution next to document holder's name.]

Document Changes Distribution

1. A document change is received. Check to make sure that page changes have a "revision number" in the upper right corner of the pages. If a number does not appear, return changes to source with a request for a revision number.

2. The document change is assigned a "change number" and entered on Document Control Form B, "Record of Changes."

3. Document Control Form C, "Document Change Instructions" is prepared.

4. A Reproduction Request (JAN 72-62) is submitted for the document change pages — both for copies on distribution list and copies in stock.

5. Document Control Form D, "Notice of Receipt," is prepared for each document on distribution list.

6. Document Control Form C, "Document Change Instructions," and the printed page changes are attached to Document Control Form D, "Notice of Receipt."

7. Document changes are mailed. The date of distribution is recorded on Document Control Form B, "Record of Changes."

8. Document copies in stock are updated.

9. When Document Control Form D, "Notice of Receipt," is returned by the document holder, record receipt on Document Control Form A, "Distribution List." Discard.

10. If a document holder fails to return his/her Document Control Form D, "Notice of Receipt," within thirty days, contact document holder to assure that the document change was received.

DOCUMENT CONTROL FORM A

DISTRIBUTION LIST

DOCUMENT: ______________________________

COPY NUMBER	DISTRIBUTION LIST	CHANGES													

DOCUMENT CONTROL FORM B

RECORD OF CHANGES

DOCUMENT: ____________________

CHANGE NO.	DATE ENTERED	Date Distributed

CHANGE NO.	DATE ENTERED	Date distributed

DOCUMENT CONTROL FORM C

DOCUMENT CHANGE INSTRUCTIONS

Change No. ____ to the Massachusetts Comprehensive Emergency Response Plan.

NOTE: Discard this sheet after use.

DOCUMENT CONTROL FORM C

DOCUMENT CHANGE INSTRUCTIONS

Change No. 1 to the Massachusetts Comprehensive Emergency Response Plan.

1. Remove existing pp. ONE-40 to ONE-42 and insert attached pp. ONE-40 to ONE-43, revision 1.

2. Remove existing Annex B (pp. B-1 to B-4) and insert attached Annex B (pp. B-1 to B-4), revision 1.

etc.

SAMPLE

NOTE: Discard this sheet after use.

NOTICE OF RECEIPT

Document Title: Massachusetts Comprehensive Emergency Response Plan

Copy Number: ______________________________

Change Number: ______________________________

Issue Date: ______________________________

Attached are authorized revisions to the Massachusetts Comprehensive Emergency Response Plan.

Please insert these revision, as instructed, into your assigned copy and destroy all superseded and out-dated pages.

Enter change number on the "Record of Changes" form in front of document.

This acknowledges receipt of change number ____ to the Massachusetts Comprehensive Emergency Response Plan. All superseded pages have been removed and destroyed.

______________________________ ______________________

Signature of Plan Holder Date

Return this sheet to:

Document Control
Massachusetts Civil Defense Agency
400 Worcester Road
Framingham, Massachusetts 01701

Attachment

ANNEX 10 RESOURCES

A. INTRODUCTION

This Annex describes inventories of general emergency equipment resources hospitals and ambulances that can be marshalled in the event of an emergency, and of radiological instruments, radiological laboratories, and meteorological equipment that have particular applicability to a radiological emergency.

B. DISCUSSION

The Massachusetts Civil Defense Agency (MCDA), as the emergency coordinating agency for the Commonwealth, is responsible for identifying and marshalling emergency resources. MCDA maintains a computerized inventory of available State agency equipment which might be useful in an emergency. This system can provide inventories sorted by city or town; alphabetically by item description; by agency and item description; or by Civil Defense Area and agency. This system is being expanded to include potentially useful emergency equipment owned by cities and towns. Such inventories are presently maintained in hard copy only, as a part of the local basic operations plan.

C. CONTENTS

This Annex contains:

Attachment B10-1	General Emergency Equipment Inventory
Attachment B10-2	Radiological Equipment Inventory
Attachment B10-3	Ambulance Service Inventory
Attachment B10-4	Hospital Inventory
Attachment B10-5	Inventory of Radiological Laboratories and Meteorological Resources

General Emergency Equipment Inventory

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000002       000     SYM.AGENCY                          NAME                    PHONE[DAY] PHONE[NIGHT]
000003       000     EOPSEXEC OFFICE OF PUBLIC SAFETY    GEORGE A LUCIANO        727-7775   238-4852
000004       000     EOPSEXEC OFFICE OF PUBLIC SAFETY    GEORGE H TULLY  .       727-7775   777-0828
000005       000     MCDAMASS CIVIL DEFENSE AGENCY       ROBERT H CUNNINGHAM     237-0200   696-7523
000006       000     MCDAMASS CIVIL DEFENSE AGENCY       PAUL CAHILL             237-0200   385-9968
000007       000     MNG MASS ARMY NATIONAL GUARD        MG VAHAN VARTANIAN      782-7842   524-2313
000008       000     MNG                                 24 HOUR ANSWERING SERVICE          782-7842
000009       000     MNG MASS ARMY NATIONAL GUARD        LTC WILLIAM GORMLEY     787-1157   327-5918
000010       000     HSB GOVERNOR,S H-WAY SAFETY BUREAU FRANCIS X COLLETON      727-5074   383-6319
000011       000     HSB GOVERNOR,S H-WAY SAFETY BUREAU JOSEPH COOPER           727-5074   569-1667
000012       000     CJT CRIMINAL JUSTICE TNG COUNCIL    GARY EGAN               727-7827   235-5111
000013       000     CCJ  COMMITTEE ON CRIMINAL JUSTICE WILLIAM HIGHGAS         727-6300
000014       000     RMV REGISTRY OF MOTOR VEHICLES      RICHARD E MCLAUGHLIN    727-3703   876-4049
000015       000     @MV REGISTRY OF MOTOR VEHICLES      E THEODORE GUNARIS      727-3800   259-9778
000016       000     MSP DEPARTMENT OF PUBLIC SAFETY     DENNIS CONDON JR        566-4500   893-5382
000017       000     MSP DEPARTMENT OF PUBLIC SAFETY     COL FRANK J TRABUCCO    566-4500
000018       000     MSP DEPARTMENT OF PUBLIC SAFETY     OR ON-CALL SENIOR OFFICER
000019       000     MSP DEPARTMENT OF PUBLIC SAFETY     LTC JAMES T CANTY       566-4500   429-6643
000020       000     EOT EXEC OFFICE OF TRANSPORTATION   BARRY M LOCKE           727-7683   329-3371
000021       000     EOT EXEC OFFICE OF TRANSPORTATION   JAMES O LEARY           727-6457   469-2967
000022       000     MBTAMASS BAY TRANS AUTHORITY        ROBERT FOSTER           722-5176   545-2296
000023       000     MBTAMASS BAY TRAN AUTHORITY         RICHARD E KENNEY        722-5747   364-9383
000024       000     DPW DEPT OF PUBLIC WORKS            DEAN P AMIDON           727-4800 413-528-1233
000025       000     DPW DEPT OF PUBLIV WORKS            DEAN P AMIDON           727-4800 413-528-1233
000026       000     EOEASEC OF ENVIRONMENTAL AFFAIRS    JOHN A BEWICK           727-9800   965-3331
000027       000     EA  ENVIRONMENTAL AFFAIRS           KENNETH A CROSSMAN      727-3190   890-3949
000028       000     DEM DEPT OF ENVIRONMENTAL MGMT      RICHARD E KENDALL       727-3163   548-9386
000029       000     EQE DEPT OF ENV QUAL ENGINEERING    DR. ANTHONY T CORTESE 727-2960   524-4908
000030       000     DFW DEPT OF FISHERIES, WILDLIFE,    STEVE CHEMURA           727-1614 413-583-2454
000031       000     DFW AND RECREATIONAL VEHICLES                               727-1614 413-583-2454
000032       000     MDC METROPOLITAN DISTRICT COMM.     GUY A CARBONE           727-5114   523-1212
000033       000     COR DEPT. OF CORRECTION             WILLIAM T HOGAN JR.     727-3301   449-4233
000034       000     MRV MARINE AND RECREATIONAL VEH     FRED NATALONI           727-3900   526-4539
000035       000     CP  CAPITOL POLICE                  CHIEF PAUL L DOHERTY    727-2912   933-4141
000036       000     DFD DIVISION OF FOOD AND DRUGS      DR GEORGE MICHAEL       727-2670   837-0086
000037       000     MPA MASS. PORT AUTHORITY
000038       000     MTA MASS. TURNPIKE AUTHORITY
000039       000     MAD MASS. AERONAUTICS
000040       000     EALEENV.AFFIRS LAW ENF.
000041       000     EM  ENV. MANAGEMENT

END ELT.
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000036      000        WATER PURIFICATION EQUIPMENT                                   000012   T
000037      000        MAINTENANCE/REPAIR EQUIPMENT                                   000013   T
000038      000        CHEMICAL/BIOLOGICAL/RADIOLOGICAL EQUIPMENT                     000014   T
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000095	000	EMERG.CARE LTD.	1	MCI FRAMINGHAM	COR 1	00020
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000135    000    MISCELLANEOUS RANGE        1    MCI NORFOLK        COR  2       00023
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000138    000    EMERGENCY MED TECH.        4    MCI FRAMINGHAM     COR  1       00024
000139    000    EMERGENCY MED TECH.       10    MCI BRIDGEWATER    COR  2       00024
000140    000    EMERGENCY MED TECH.        2    MCI SHIRLEY        COR  3       00024
000141    000    EMERGENCY MED TECH.        1    MCI LANCASTER      COR  3       00024
000142    000    LABOR-RELATIONS PEC.       1    BOSTON             COR  1       00024
000143    000    ENGINEERS                  1    BOSTON             COR  1       00024
000144    000    GRANT WRITERS              5    BOSTON             COR  1       00024
000145    000    LANGUAGE EXP-INSTR         1    MCI CONCORD        COR  1       00024
000146    000    LANGUAGE-EXP-INSTR.        3    MCI BRIDGEWATER    COR  2       00024
000147    000    LANGUAGE-EXP-INSTR.        1    MCI NORFOLK        COR  2       00024
000148    000    LANGUAGE-EXP-INSTR.        1    MCI WALPOLE        COR  2       00024
000149    000    LEGAL SPECIALISTS          5    BOSTON             COR  1       00024
000150    000    MEDICALLY SKILLED SPEC.         ALL MCIS           COR          00024
000151    000    PARAMEDICS                 1    MCI NORFOLK        COR  2       00024
000152    000    PARAMEDICS                 1    MCI WALPOLE        COR  2       00024
000153    000    PARAMEDICS                 1    MCI FRAMINGHAM     COR  1       00024
000154    000    PARAMEDICS                 1    MCI SHIRLEY        COR  3       00024
000155    000    PARAMEDICS                 1    MCI PLYMOUTH       COR  2       00024
000156    000    PARAMEDICS                 3    MCI-CONCORD        COR  1       00024
000157    000    PARAMEDICS                12    MCI BRIDGEWATER    COR  2       00024
000158    000    PHYS SECURITY EVAL TMS    20    BOSTON             COR  1       00024
000159    000    PLANNERS                   4    BOSTON             COR  1       00024
000160    000    PUBLIC-COMM REL SPEC       1    BOSTON             COR  1       00024
000161    000    WEAPONS-TACTICS INSTR      1    MCI FRAMINGHAM     COR  1       00024
000162    000    WEAPONS-TACTICS INSTR      1    MCI NORFOLK        COR  2       00024
000163    000    WEAPONS-TACTICS INSTR      1    MCI CONCORD        COR  1       00024
000164    000    WEAPONS-TACTICS INSTR      3    MCI WALPOLE        COR  2       00024
000165    000    WEAPONS-TACTICS INSTR      2    MCI BRIDGEWATER    COR  2       00024

END ELT.
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@ELT,ILD   A.,HANLON
ELTOT7 RLIB70 11/01-14:50:33-(,0)
000001       000
000002       000
000003       000        ITEM DESCRIPTION    QTY        LOCATION           AGCY AC
000004       000
000005       000        BARRICADES              16     BOSTON             CP    1              0000301
000006       000        BOMB BLANKETS            4     BOSTON             CP    1              0000301
000007       000        SHIELD FACE             85     BOSTON             CP    1              0000301
000008       000        MASK GAS                 8     BOSTON             CP    1              0000301
000009       000        BATON RIOT             100     BOSTON             CP    1              0000301
000010       000        GRENADE TEAR GAS        44     BOSTON             CP    1              0000301
000011       000        CHEMICAL MACE           60     BOSTON             CP    1              0000301
000012       000        BULLHORN                 6     BOSTON             CP    1              0000301
000013       000        RADIO POLICE            10     BOSTON             CP    1              0000401
000014       000        PROJECTOR SLIDE          1     BOSTON             CP    1              0000401
000015       000        WALKIE TALKIE           30     BOSTON             CP    1              0000401
000016       000        AMBULANCES - CIVILIAN    2     BOSTON             CP    1              0000701
000017       000        SMOKE EVAPORATORS        3     BOSTON             CP    1              0000701
000018       000        TRUCK STAKE              1     BOSTON             CP    1              000 706
000019       000        BLANKETS                12     BOSTON             CP    1              00010
000020       000        CAPACITY 500 OR MORE     1     BOSTON             CP    1              00018
000021       000        CAPACITY 250 OR MORE     2     BOSTON             CP    1              00018
000022       000        CAP 100 OR MORE          1     BOSTON             CP    1              00018
000023       000        PARKING GARAGES        818     BOSTON             CP    1              00021
000024       000        STAGING AREAS/LOTS       6     BOSTON             CP    1              00021
000025       000        AUDITORIUMS-600 SEAT     1     BOSTON             CP    1              00022
000026       000        TRAINING FAC100 SEAT     1     BOSTON             CP    1              00022
000027       000        TRNG. FAC.  300 SEAT     1     MCI NORFOLK        CP    2              00022
000028       000        CLASSROOM  225 SEAT      1     BOSTON             CP    1              00022
000029       000        CLASSROOM  116 SEAT      1     BOSTON             CP    1              00022
000030       000        CLASSROOM  10-50 SEAT   34     BOSTON             CP    1              00022
000031       000        CLASSROOM  500 SEAT      1     BOSTON             CP    1              00022
000032       000        CLASSROOM  15-80 SEAT    6     BOSTON             CP    1              00022
000033       000        CLASSROOM  50 SEAT       4     BOSTON             CP    1              00022
000034       000        CLASSROOM  20-80 SEAT   16     BOSTON             CP    1              00022
000035       000        EMT - CPR - FIRST AID    1     BOSTON             CP    1              0002201
000036       000        EMERGENCY MED TECH.     19     BOSTON             CP    1              00024
000037       000        PARAMEDICS               1     BOSTON             CP    1              00024
000038       000        PHOTOGRAPHERS            4     BOSTON             CP    1              00024
000039       000        PHYS SECURITY EVAL. TM\.       BOSTON             CP    1              00024
000040       000        WEAPONS-TACTICS INSTR    3     BOSTON             CP    1              00024

END ELT.
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@ELT,ILD   A,,HANLON
ELTOT7 RLIB70 11/01-14:50:41-(,0)
000001      000
000002      000
000003      000        ITEM DESCRIPTION    QTY        LOCATION           AGCY AC
000004      000
000005      000        BOATS 10FT-20FT          1     ACTON              DFW               00002
000006      000        BOAT 10-20FT             3     BUZZARDS BAY       DFW  2            00002
000007      000        BOAT 10-20FT            10     WESTBORO           DFW  3            00002
000008      000        BOAT 10-20FT             1     W BOYLSTON         DFW  3            00002
000009      000        BOAT 10-20FT             4     BELCHERTOWN        DFW  4            00002
000010      000        BOAT 10-20FT             6     PITTSFIELD         DFW  4            00002
000011      000        BOAT 10-20FT             1     PALMER             DFW  4            00002
000012      000        TRLR BOAT                2     BUZZARDS BAY       DFW  2            0000204
000013      000        TRLR BOAT                4     WESTBORO           DFW  3            0000204
000014      000        TRLT BOAT                1     W BOYLSTON         DFW  3            0000204
000015      000        TRLR BOAT                2     BELCHERTOWN        DFW  4            0000204
000016      000        LIGHT PORT FLOOD         1     WESTBORO           DFW  3            0000301
000017      000        CAMERA MOTION PICTURE    2     WESTBORO           DFW  3            0000401
000018      000        PROJECTOR MOTION PIC     1     ACTON              DFW  1            0000401
000019      000        PROJECTOR MOTION PIC     2     BELCHERTOWN        DFW  4            0000401
000020      000        PROJECTOR MOTION PIC     1     PITTSFIELD         DFW  4            0000401
000021      000        PROJECTOR MOTION PIC     3     WESTBORO           DFW  3            0000401
000022      000        PROJECTOR MOTION PIC     1     W BOYLSTON         DFW  3            0000401
000023      000        PROJECTOR MOTION PIC     1     BUZZARDS BAY       DFW  2            0000401
000024      000        PROJECTOR SLIDE          1     ACTON              DFW  1            0000401
000025      000        PROJECTOR SLIDE          1     BUZZARDS BAY       DFW  2            0000401
000026      000        PROJECTOR SLIDE          3     WESTBORO           DFW  3            0000401
000027      000        PROJECTOR SLIDE          1     W BOYLSTON         DFW  3            0000401
000028      000        PROJECTOR SLIDE          2     BELCHERTOWN        DFW  4            0000401
000029      000        PROJECTOR SLIDE          1     PITTSFIELD         DFW  4            0000401
000030      000        CAMERA STILL             1     ACTON              DFW  1            0000401
000031      000        CAMERA STILL             1     BUZZARDS BAY       DFW  2            0000401
000032      000        CAMERA STILL            17     WESTBORO           DFW  3            0000401
000033      000        CAMERA STILL             1     W BOYLSTON         DFW  3            0000401
000034      000        CAMERA STILL             1     BELCHERTOWN        DFW  4            0000401
000035      000        CAMERA STILL             1     PITTSFIELD         DFW  4            0000401
000036      000        CAMERA STILL             1     WILBRAHAM          DFW  4            0000401
000037      000        SCREEN VIEWING           1     ACTON              DFW  1            0000401
000038      000        SCREEN VIEWING           1     BUZZARDS BAY       DFW  2            0000401
000039      000        SCREEN VIEWING           2     WESTBORO           DFW  3            0000401
000040      000        SCREEN VIEWING           2     BELCHERTOWN        DFW  4            0000401
000041      000        SCREEN VIEWING           1     WILBRAHAM          DFW  4            0000401
000042      000        WALKIE TALKIE            1     ACTON              DFW  1            0000401
000043      000        WALKIE TALKIE            2     WESTBORO           DFW  3            0000401
000044      000        BACKHOE                  1     WILBRAHAM          DFW  4            0000501
000045      000        BACKHOE                  1     ROWLEY             DFW  1            0000501
000046      000        BULDOZER                 1     BALDWINVILLE       DFW  3            0000501
000047      000        CONCRETE MIXER HAULER    1     ACTON              DFW  1            0000501
000048      000        CONCRETE MIXER HAULER    1     W BOYLSTON         DFW  3            0000501
000049      000        CONCRETE MIXER HAULER          BELCHERTOWN        DFW  4            0000501
000050      000        CONCRETE MIXER HAULER    1     PALMER             DFW  4            0000501
000051      000        DUMP TRUCK               1     ACTON              DFW  1            0000501
000052      000        DUMP TRUCK               1     BUZZARDS BAY       DFW  2            0000501
000053      000        DUMP TRUCK               1     PITTSFIELD         DFW  4            0000501
000054      000        DUMP TRUCK               1     AYER               DFW  1            0000501
000055      000        DUMP TRUCK               1     E SANDWICH         DFW  2            0000501
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000056	000	DUMP TRUCK	1	WILBRAHAM	DFW	4	0000501
000057	000	DUMP TRUCK	1	MONTAGUE	DFW	4	0000501
000058	000	DUMP TRUCK	1	PALMER	DFW	4	0000501
000059	000	DUMP TRUCK	1	SUNDERLAND	DFW	4	0000501
000060	000	DUMP TRUCK	2	BELCHERTOWN	DFW	4	0000501
000061	000	FRONT LOADER	1	BUZZARDS BAY	DFW	2	0000501
000062	000	FRONT LOADER	1	W BOYLSTON	DFW	3	0000501
000063	000	GRADER	1	BELCHERTOWN	DFW	4	0000501
000064	000	PLOW	2	BELCHERTOWN	DFW	4	0000501
000065	000	PLOW	1	AYER	DFW	1	0000501
000066	000	PLOW	1	E SANDWICH	DFW	2	0000501
000067	000	PLOW	1	WILBRAHAM	DFW	4	0000501
000068	000	PLOW	1	MONTAGUE	DFW	4	0000501
000069	000	PLOW	1	PALMER	DFW	4	0000501
000070	000	PLOW	1	SUNDERLAND	DFW	4	0000501
000071	000	PLOW	1	SANDWICH	DFW	2	0000501
000072	000	PLOW	1	BALDWINVILLE	DFW	3	0000501
000073	000	LADDER 20FT	1	BUZZARDS BAY	DFW	2	0000502
000074	000	LADDER 20FT	1	W BOYLSTON	DFW	3	0000502
000075	000	LADDER 20FT	1	BELCHERTOWN	DFW	4	0000502
000076	000	LADDER 20FT	2	AYER	DFW	1	0000502
000077	000	LADDER 20FT	1	E SANDWICH	DFW	2	0000502
000078	000	LADDER 20FT	2	WILBRAHAM	DFW	4	0000502
000079	000	LADDER 20FT	1	SUNDERLAND	DFW	4	0000502
000080	000	LADDER 20FT	1	SANDWICH	DFW	2	0000502
000081	000	LADDER 20FT	1	BALDWINVILLE	DFW	3	0000502
000082	000	DRINK CONTAINER	1	ACTON	DFW	1	0000601
000083	000	DRINK CONTAINER	1	AYER	DFW	1	0000601
000084	000	DRINK CONTAINER	1	E SANDWICH	DFW	2	0000601
000085	000	DRINK CONTAINER	1	WILBRAHAM	DFW	2	0000601
000086	000	PUMPER	37	BELCHERTOWN	DFW	4	0000701
000087	000	PUMPER	6	PITTSFIELD	DFW	4	0000701
000088	000	PUMPER	7	AYER	DFW	1	0000701
000089	000	PUMPER	8	E SANDWICH	DFW	2	0000701
000090	000	PUMPER	6	WILBRAHAM	DFW	4	0000701
000091	000	PUMPER	9	MONTAGUE	DFW	4	0000701
000092	000	PUMPER	18	PALMER	DFW	4	0000701
000093	000	PUMPER	18	SUNDERLAND	DFW	4	0000701
000094	000	PUMPER	7	WESTBORO	DFW	3	0000701
000095	000	PUMPER	10	W BOYLSTON	DFW	3	0000701
000096	000	PUMPER	20	SANDWICH	DFW	2	0000701
000097	000	PUMPER	7	BALDWINVILLE	DFW	3	0000701
000098	000	SNOWMOBILE	1	WESTBORO	DFW	3	0000711
000099	000	SNOWMOBILE	1	ACTON	DFW	1	0000711
000100	000	SNOWMOBILE	1	W BOYLSTON	DFW	3	0000711
000101	000	SEDANS	1	ACTON	DFW		0000702
000102	000	SEDANS	10	WESTBORO	DFW	3	0000702
000103	000	SEDAN	1	PITTSFIELD	DFW	4	0000702
000104	000	SEDAN	1	BELCHERTOWN	DFW	4	0000702
000105	000	TRUCKS 4X4	1	BUZZARDS BAY	DFW	2	000 706
000106	000	TRUCKS 4X4	1	WESTBORO	DFW	3	000 706
000107	000	TRUCKS 4X4	1	WBOYLSTON	DFW	3	000 706
000108	000	TRUCKS 4X4	1	PITTSFIELD	DFW	4	000 706
000109	000	TRUCKS PICKUPS	2	BUZZARDS BAY	DFW	2	000 706
000110	000	TRUCK PICKUP	7	WESTBORO	DFW	3	000 706
000111	000	TRUCK PICKUP	2	W BOYLSTON	DFW	3	000 706
000112	000	TRUCK PICKUP	4	BELCHERTOWN	DFW	4	000 706

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000113     000      TRUCK PICKUP           2    PITTSFIELD      DFW  4       000 706
000114     000      TRUCK PICKUP           2    AYER            DFW  1       000 706
000115     000      TRUCK PICKUP           2    E SANDWICH      DFW  2       000 706
000116     000      TRUCK PICKUP           2    WILBRAHAM       DFW  4       000 706
000117     000      TRUCK PICKUP           1    MONTAGUE        DFW  4       000 706
000118     000      TRUCK PICKUP           1    PALMER          DFW  4       000 706
000119     000      TRUCK PICKUP           1    SUNDERLAND      DFW  4       000 706
000120     000      TRUCK PICKUP           1    SANDWICH        DFW  2       000 706
000121     000      TRUCK PICKUP           1    BALDWINVILLE    DFW  3       000 706
000122     000      TRUCK PICKUP           1    ROWLEY          DFW  1       000 706
000123     000      2-TON STAKE BODY       2    ACTON           DFW  1       000 706
000124     000      2-TON STAKE BODY       1    BUZZARDS BAY    DFW  2       000 706
000125     000      2-TON STAKE BODY       1    BELCHERTOWN     DFW  4       000 706
000126     000      2-TON STAKE BODY       1    SUNDERLAND      DFW  4       000 706
000127     000      REPRODUCTION EQUIP     1    WESTBORO        DFW  3       00009
000128     000      DRAFT EQUIP SET        1    WESTBORO        DFW  3       00009
000129     000      DRAFTING TABLE         1    WESTBORO        DFW  3       00009
000130     000      MIMEOGRAPH MACH.       1    ACTON           DFW  1       00009
000131     000      MIMEOGRAPH MACH.       1    BUZZARDS BAY    DFW  2       00009
000132     000      MIMEOGRAPH MACH.       1    WESTBORO        DFW  3       00009
000133     000      MIMEOGRAPH MACH        1    BELCHERTOWN     DFW  4       00009
000134     000      MIMEOGRAPH MACH.       1    PITTSFIELD      DFW  4       00009
000135     000      PHOTO LAB.             1    WESTBORO        DFW  3       00009
000136     000      WATER TANKS            1    ACTON           DFW  1       00012
000137     000      WATER TANK             1    BUZZARDS BAY    DFW  2       00012
000138     000      WATER TANK             1    WESTBORO        DFW  3       00012
000139     000      WATER TANK             1    W BOYLSTON      DFW  3       00012
000140     000      WATER TANK             2    BELCHERTOWN     DFW  4       00012
000141     000      WATER TANK             1    PITTSFIELD      DFW  4       00012
000142     000      WATER TANK             1    MONTAGUE        DFW  4       00012
000143     000      WATER TANK             1    PALMER          DFW  4       00012
000144     000      WATER TANK             1    SUNDERLAND      DFW  4       00012
000145     000      WATER TANK             1    SANDWICH        DFW  2       00012

END ELT.
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@ELT,ILD   A.,HANLON
ELTOT7 RLIB70 11/01-14:50:51-(,0)
000001      000
000002      000
000003      000      ITEM DESCRIPTION    QTY        LOCATION            AGCY AC
000004      000
000005      000      VEST ARMOR             12      STATEWIDE           DPS                0000301
000006      000      HORSEMEN               12                          DPS                00024

END ELT.
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@ELT,ILD   A,,HANLON
ELTOT7 RLIB70 11/01-14:50:52-(,0)
000001      000
000002      000
000003      000         ITEM DESCRIPTION    QTY        LOCATION            AGCY AC
000004      000
000005      000         ROW BOAT                 11    DISTRICTS           DPW                0000202
000006      000         ROW BOAT                  2    LENOX               DPW  4             0000202
000007      000         ROW BOAT                  1    WORCESTER           DPW  3             0000202
000008      000         ROW BOAT                  3    MIDDLEBORO          DPW  2             0000202
000009      000         ROW BOAT                  2    ARLINGTON           DPW  1             0000202
000010      000         TRLR MTR BOAT             1    DANVERS             DPW  1             0000204
000011      000         TRLR MTR BOAT             1    DANVERS             DPW  1             0000204
000012      000         TRLR MTR BOAT             2    TAUNTON             DPW  2             0000204
000013      000         TRLR MTR BOAT             2    NORTHAMPTON         DPW  4             0000204
000014      000         TRLR MTR BOAT             2    NORTHAMPTON         DPW  4             0000204
000015      000         TRLR MTR BOAT             1    MIDDLEBORO          DPW  2             0000204
000016      000         BOAT RECREATIONAL         1    BOSTON              DPW  1             0000204
000017      000         MOTION ANALYZER 35MM      1    BOSTON              DPW  1             0000401
000018      000         MOTION ANALYZER 35MM      7    BOSTON              DPW  1             0000401
000019      000         CAMERA MOTION PICTURE     1    BOSTON              DPW  1             0000401
000020      000         PROJECTOR MOTION PIC      2    BOSTON              DPW  1             0000401
000021      000         PUB-ADD SYSTEM LARGE      1    BOSTON              DPW  1             0000401
000022      000         PA SYST LARG TRUCKMT      1    WELLESLEY           DPW  1             0000401
000023      000         RADIOS-SSB              450    STATEWIDE           DPW                0000401
000024      000         BASE STATIONS            11    STATEWIDE           DPW                0000401
000025      000         AUX BASE STATIONS        16    STATEWIDE           DPW                0000401
000026      000         RADIO MOBILE UNIT       504    STATEWIDE           DPW                0000401
000027      000         SLIDE PROJECTORS          5    BOSTON              DPW  1             0000401
000028      000         PROJECTOR SIDE R-VIEW     1    BOSTON              DPW  1             0000401
000029      000         PROJECTOR OVERHEAD        1    BOSTON              DPW  1             0000401
000030      000         CAMERA STILL              6    BOSTON              DPW  1             0000401
000031      000         CAMERA 35MM               3    BOSTON              DPW  1             0000401
000032      000         CAMERA 2-25 INCH          2    BOSTON              DPW  1             0000401
000033      000         CAMERA 4X5                3    BOSTON              DPW  1             0000401
000034      000         TAPE RECORD REEL TO REEL  1    BOSTON              DPW  1             0000401
000035      000         TAP REC-PASYST COMB       1    BOSTON              DPW  1             0000401
000036      000         TELETYPE                  2    BOSTON              DPW  1             0000401
000037      000         TELETYPE WATTS            1    BOSTON              DPW  1             0000401
000038      000         TELETYPE LEAPT POLICE     1    BOSTON              DPW  1             0000401
000039      000         CAMERA COLR VID-TAPE      1    BOSTON              DPW  1             0000401
000040      000         MONITOR VID-TAPE BW       1    BOSTON              DPW  1             0000401
000041      000         CAMERA VID-TAPE BW        1    BOSTON              DPW  1             0000401
000042      000         MONITOR COLR VID-TAP      1    BOSTON              DPW  1             0000401
000043      000         SCREEN  6  FT             3    BOSTON              DPW  1             0000401
000044      000         SCREEN  10 FT             1    BOSTON              DPW  1             0000401
000045      000         TRUCK MTD 35MM AUTOMAX SF1    BOSTON              DPW  1             0000401
000046      000         35 MM FILM EDITING CENTER1    BOSTON              DPW  1             0000401
000047      000         BACKHOE                   4    DISTRICTS           DPW                0000501
000048      000         BRIDGE BAILEY 60FT        1    LENOX               DPW  4             0000501
000049      000         BRIDGE BAILEY 60FT        1    NORTHAMPION         DPW  4             0000501
000050      000         BRIDGE   BAILEY 60 FT     1    WORCESTER           DPW  3             0000501
000051      000         BRIDGE PANEL 60FT         1    WORCESTER           DPW  3             0000501
000052      000         BRIDGE PANEL 60FT         1    ARLINGTON           DPW  4             0000501
000053      000         BRIDGE PANEL 60FT         1    TAUNTON             DPW  2             0000501
000054      000         BRIDGE PANEL 60FT         2    SO BOSTON           DPW  1             0000501
000055      000         CHAIN SAWS               31    STATEWIDE           DPW                0000501
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000056	000	COMPRESSORS	85	STATEWIDE	DPW		0000501
000057	000	CONCRETE MIXER HAULER	37	STATEWIDE	DPW		0000501
000058	000	CRANE	7	DISTRICTS	DPW		0000501
000059	000	DRILLS-BREAKERS	37	STATEWIDE	DPW		0000501
000060	000	DUMP TRUCK	349	STATEWIDE	DPW		0000501
000061	000	FLASHING ARROW BOARDS	58	STATEWIDE	DPW		0000501
000062	000	FRONT LOADER	107	STATEWIDE	DPW		0000501
000063	000	GRADER	12	STATEWIDE	DPW		0000501
000064	000	PAVEMENT MARKERS	104	STATEWIDE	DPW		0000501
000065	000	ROLLERS-COMPACTORS	60	STATEWIDE	DPW		0000501
000066	000	PLOW	1999	STATEWIDE	DPW		0000501
000067	000	SANDERS	456	STATEWIDE	DPW		0000501
000068	000	SPAYERS	26	STATEWIDE	DPW		0000501
000069	000	STUMP CUTTERS	1	NORTHAMPTON	DPW	4	0000501
000070	000	STUMP CUTTER	1	ARLINGTON	DPW	1	0000501
000071	000	SWEEPERS	87	STATEWIDE	DPW		0000501
000072	000	TRUCK W CRANE	17	STATEWIDE	DPW		0000501
000073	000	UNDERBRIDGE INSPECTOR	2	WELLESLEY	DPW	1	0000501
000074	000	WOOD CHIPPER	18	STATEWIDE	DPW		0000501
000075	000	LADDER 20FT	8	DISTRICTS	DPW		0000502
000076	000	LADDER TRUCKS	1	NORTH HAMPTON	DPW	4	0000701
000077	000	LADDER TRUCK	1	WORCESTER	DPW	3	0000701
000078	000	LADDER TRUCK	1	ARLINGTON	DPW	1	0000701
000079	000	SEDANS	421	STATEWIDE	DPW		0000702
000080	000	LOWBOY	5	WELLESLEY	DPW	1	000 705
000081	000	PICKUPS	335	STATEWIDE	DPW		000 706
000082	000	SMALL TRAILERS	48	STATEWIDE	DPW		000 706
000083	000	TR-WITH WINCH CRANE	3	WELLESLEY	DPW	1	000 706
000084	000	TRUCK MISC	971	STATEWIDE	DPW		000 706
000085	000	SKID MOUNTED LUBE UNITS	1	LENOX	DPW	4	0000709
000086	000	SKID MTD LUBE UNIT	1	WORCESTER	DPW	3	0000709
000087	000	SHOP VAN TRUCK	1	WELLESLEY	DPW	1	0000709
000088	000	STEAM CLEANERS	9	DISTRICTS	DPW		0000709
000089	000	RAMP TRUCK	2	DISTRICTS	DPW		0000709
000090	000	RAMP TRUCK	1	LENOX	DPW	4	0000709
000091	000	RAMP TRUCK	1	SO BOSTON	DPW	1	0000709
000092	000	RESEARCH MATERIALS LAB	1	WELLESLEY	DPW	1	00008
000093	000	ENGINEERING EXPLORATION	1	WELLESLEY	DPW	1	00008
000094	000	THODOLITES	3	BOSTON	DPW	1	00008
000095	000	PRECISE LEVEL RODS	2	BOSTON	DPW	1	00008
000096	000	PRECISE LEVELS	2	BOSTON	DPW	1	00008
000097	000	VERTICAL COLLIMATOR	3	BOSTON	DPW	1	00008
000098	000	BAROMETERS	1	BOSTON	DPW	1	00008
000099	000	PSYCHROMETERS	2	BOSTON	DPW	1	00008
000100	000	TARGET SETS	2	BOSTON	DPW	1	00008
000101	000	SURVEYING INSTRUMENTS	21	STATEWIDE	DPW		00008
000102	000	GEODOMETERS ELEC DIS MEAS	2	BOSTON	DPW	1	00008
000103	000	DIRECT READOUT EDM	1	BOSTON	DPW	1	00008
000104	000	MIRROR STEREO VIEWER	1	BOSTON	DPW	1	00008
000105	000	BLUE PRINTMACHINES	2	BOSTON	DPW	1	00009
000106	000	DRAFTING EQUIP SET	104	DISTRICTS	DPW		00009
000107	000	DRAFTING TABLE	200	STATEWIDE	DPW		00009
000108	000	MICROFILM 35MM	1	BOSTON	DPW	1	00009
000109	000	MICROFILM 16MM	4	BOSTON	DPW	1	00009
000110	000	MICROFILM READER-PRINTER	2	BOSTON	DPW	1	00009
000111	000	MICROFILM READ PRINT 16MM	1	BOSTON	DPW	1	00009
000112	000	DUPLICATORS LEASED	8	DISTRICTS	DPW	1	00009

000113	000	DUPLICATOR LEASED	5	BOSTON	DPW	1	00009
000114	000	DUPLICATING SYSTEMS	2	BOSTON	DPW	1	00009
000115	000	MIMEOGRAPH MACH.	3	BOSTON	DPW	1	00009
000116	000	OFFSET PRESS	5	BOSTON	DPW	1	00009
000117	000	PHOTO LAB.	1	BOSTON	DPW	1	00009
000118	000	PHOTOSTAT MACHINES	1	BOSTON	DPW	1	00009
000119	000	REP RO-MACHINE OWNED	3	BOSTON	DPW	1	00009
000120	000	SCUBA EQUIPMENT SETS	28	STATEWIDE	DPW		00011
000121	000	VAN UNDERWTR OPERS	2	BOSTON	DPW	1	00011
000122	000	DRY SUIT SYSTEMS	4	WELLESLEY	DPW	1	00011
000123	000	AERIAL PLATFORM	1	LENOX	DPW	4	00013
000124	000	AERIAL PLATFORM	1	ARLINGTON	DPW	1	00013
000125	000	AERIAL PLATFORM	1	TAUNTON	DPW	2	00013
000126	000	AERIAL PLATFORM	1	SO BOSTON	DPW	1	00013
000127	000	AERIAL TRUCKS W/BUCKETS	16	DISTRICTS	DPW		00013
000128	000	WELDERS	10	STATEWIDE	DPW		00013
000129	000	CATCH BASIN CLEANERS	9	STATEWIDE	DPW		00013
000130	000	SEWER CLEANERS	23	STATEWIDE	DPW		00013
000131	000	COMPUTER 1BM370/145	8	BOSTON	DPW	1	0002601
000132	000	GENERATOR	22	STATEWIDE	DPW		0001502
000133	000	MTR-TRANSP. MAJ REPAIR	1	WELLESLEY	DPW	1	00021
000134	000	MINOR REPAIR AREA	8	DISTRICTS	DPW		00021
000135	000	REGULAR NO LEAD- DIESEL	7	STATEWIDE	DPW		00021
000136	000	REGULAR-DIESEL	73	STATEWIDE	DPW		00021
000137	000	REGULAR-NO LEAD	12	STATEWIDE	DPW		00021
000138	000	NO LEAD-DIESEL	4	STATEWIDE	DPW		00021
000139	000	NO LEAD ONLY	1	BOSTON	DPW	1	00021
000140	000	REGULAR ONLY	1	WILLIAMSTOWN	DPW	4	00021
000141	000	STAGING AREAS/LOTS	1	WELLESLEY	DPW	1	00021
000142	000	TANKS DIESEL	129	STATEWIDE	DPW		00021
000143	000	TRNG. FAC. 600 SEAT TO		STATEWIDE	DPW		00022
000144	000	ARTIST	3	BOSTON	DPW	1	00024
000145	000	AUDIO VISUAL ENGR	1	BOSTON	DPW	1	00024
000146	000	BLUEPRINTERS	6	BOSTON	DPW	1	00024
000147	000	BRIDGE INSPECTORS	105	STATEWIDE	DPW		00024
000148	000	CHEMISTS	20	WELLESLEY	DPW	1	00024
000149	000	COMMERCIAL ARTISTS	4	BOSTON	DPW	1	00024
000150	000	COMPUTER PROGRAMMERS	10	BOSTON	DPW	1	00024
000151	000	DATA PROCESSING SPEC	30	BOSTON	DPW	1	00024
000152	000	DIVERS	28	STATEWIDE	DPW		00024
000153	000	LABOR-RELATIONS SPEC.	1	BOSTON	DPW	1	00024
000154	000	ENGINEERS	1123	STATEWIDE	DPW		00024
000155	000	LEGAL SPECIALISTS	7	BOSTON	DPW	1	00024
000156	000	MICROFILM TECHNICIANS	3	BOSTON	DPW	1	00024
000157	000	PHOTOGRAPHERS	6	BOSTON	DPW	1	00024
000158	000	PHOTOLOGGERS VID TP SPEC	2	BOSTON	DPW	1	00024
000159	000	PLANNERS	27	BOSTON	DPW	1	00024
000160	000	PRINTERS	4	BOSTON	DPW	1	00024
000161	000	PUBLIC-COMM REL SPEC	2	BOSTON	DPW	1	00024
000162	000	RADIO DISPATCHERS	14	STATEWIDE	DPW		00024
000163	000	REGISTERED NURSE	1	BOSTON	DPW	1	00024
000164	000	RIGHT OF WAY SPECIALIST	102	STATEWIDE	DPW		00024
000165	000	WELDERS	12	STATEWIDE	DPW		00024
000166	000	WELDERS	53	STATEWIDE	DPW		00024
000167	000	BRIDGE MAINT-REPAIR FORE	17	STATEWIDE	DPW		00024
000168	000	CARPENTERS	52	STATEWIDE	DPW		00024
000169	000	CARPENTERS	1	STATEWIDE	DPW		00024

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000170     000     ELECTRICIANS              27    STATEWIDE        DPW          00024
000171     000     EQUIPMENT OPERATORS       85    STATEWIDE        DPW          00024
000172     000     HIGHWAY MNTENANCE-REP F129    STATEWIDE        DPW          00024
000173     000     MACHINISTS                 2    STATEWIDE        DPW          00024
000174     000     MECHANICS                 38    STATEWIDE        DPW          00024
000175     000     PAINTERS                 152    STATEWIDE        DPW          00024
000176     000     METALWORKERS             152    STATEWIDE        DPW          00024
000177     000     RADIO TECHNICIANS          2    WELLESLEY        DPW   1      00024
000178     000     TRAFFIC SEC FOREMEN       33    STATEWIDE        DPW   1      00024
000179     000     TREE CLIMBERS-SURGEONS    52    STATEWIDE        DPW          00024
000180     000     WRITERS-JOURNALISTS        2    BOSTON           DPW   1      00024

END ELT.
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@ELT,ILD   A,,HANLON
ELTOT7 RLIB70 11/01-14:51:09-(,0)
000001       000
000002       000
000003       000       ITEM DESCRIPTION    QTY        LOCATION          AGCY AC
000004       000
000005       000       RADIOS - UHF           50    STATEWIDE         EALE              0000401
000006       000       LEGAL SPECIALISTS       3    BOSTON            EALE 1            00024
000007       000       PUBLIC-COMM REL SPEC    1    BOSTON            EALE 1            00024
000008       000       INDIV CURRENTLY TRNG    3    BOSTON            EALE 1            00024

END ELT.
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@ELT,ILD   A,,HANLON
ELTOT7 RLIB70 11/01-14:51:10-(,0)
000001       000
000002       000
000003       000       ITEM DESCRIPTION     QTY        LOCATION          AGCY AC
000004       000
000005       000       BOAT ALUM 19FT           1      BOSTON HARBOR     EM   1          0000204
000006       000       MOTION ANALYZER         11      STATEWIDE         EM              0000401
000007       000       VAN COMMO MOBILE         1      AMHERST           EM   4          0000401
000008       000       CAMERA MOTION PICTURE    1      CHESTER           EM   4          0000401
000009       000       CAMERA MOTION PICTURE    1      SHREWSBURY        EM   3          0000401
000010       000       PROJECTOR MOTION PIC     7      STATEWIDE         EM              0000401
000011       000       SCRAPER                  1      BRIMFIELD         EM   4          0000501
000012       000       PROJECTOR SLIDE         15      STATEWIDE         EM              0000401
000013       000       PROJECTOR SLIDE          1      BOSTON            EM   1          0000401
000014       000       CAMERA STILL             2      CHICOPEE          EM   4          0000401
000015       000       CAMERA STILL             2      BOSTON            EM   1          0000401
000016       000       CAMERA STILL             2      CHICOPEE          EM   4          0000401
000017       000       SCREEN VIEWING          10      STATEWIDE         EM              0000401
000018       000       VU GRAPH PROJ            1      BOSTON            EM   1          0000401
000019       000       WALKIE TALKIE           62      STATEWIDE         EM              0000401
000020       000       BACKHOE                  1      BRIMFIELD         EM   4          0000501
000021       000       BULLDOZER                2      BRIMFIELD         EM   4          0000501
000022       000       BULLDOZER                1      BALDWINVILLE      EM   3          0000501
000023       000       BULLDOZER                1      TOPSFIELD         EM   1          0000501
000024       000       DUMP TRUCK              11      STATEWIDE         EM              0000501
000025       000       FRONT LOADER             1      TOPSFIELD         EM   1          0000501
000026       000       FRONT LOADER             1      ERVING            EM   4          0000501
000027       000       FRONT LOADER             1      BALDWINVILLE      EM   3          0000501
000028       000       SCRAPERS                 1      DOUGLAS           EM   3          0000501
000029       000       SCRAPER                  1      TOPSFIELD         EM   1          0000501
000030       000       SCRAPER                  1      OTTER RIVER       EM              0000501
000031       000       SCRAPER                  1      ERVING            EM   4          0000501
000032       000       SCRAPER                  1      FREETOWN          EM   2          0000501
000033       000       PLOW                     1      CARVER            EM   2          0000501
000034       000       PLOW                     1      TOPSFIELD         EM   1          0000501
000035       000       PUMPER                  28      STATEWIDE         EM              0000701
000036       000       TANKER 1200 GAL          8      STATEWIDE         EM              0000704
000037       000       LOWBOY                   1      CARVER            EM   2          000 705
000038       000       LOWBOY                   2      BALDWINVILLE      EM   3          000 705
000039       000       LOWBOY                   1      TOPSFIELD         EM   1          000 705
000040       000       LOWBOY                   1      BRIMFIELD         EM   4          000 705
000041       000       TRUCK STAKE              1      TOPSFIELD         EM   1          000 706
000042       000       5 TH WHEEL TRACTOR       2      BALDWINVILLE      EM   3          000 706
000043       000       TRACTOR 5TH-WHEEL        1      CARVER            EM   2          000 706
000044       000       TRACTOR 5TH WHEEL        1      BRIMFIELD         EM   4          000 706
000045       000       TRACTOR 5TH-WHEEL        1      TOPSFIELD         EM   1          000 706
000046       000       REPRO-MACHINE OWNED      6      STATEWIDE         EM              00009
000047       000       POLES - 35 FT           10      BRIMFIELD         EM   4          00013
000048       000       GENERATOR EMERG         20      STATEWIDE         EM              0001502
000049       000       PHOTOGRAPHERS            1      BOSTON            EM   1          00024
000050       000       GENERATOR                8      STATEWIDE         EM              0001502

END ELT.
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@ELT,ILD   A,,HANLON
ELTOT7 RLIB70 11/01-14:51:13-(,0)
000001       000
000002       000
000003       000       ITEM DESCRIPTION    QTY       LOCATION           AGCY AC
000004       000
000005       000       WEAPONS-TACTICS INSTR    1                       EOEA                 00024
000006       000       PHOTOGRAPHERS            1                       EOEA                 00024
000007       000       PHOTOGRAPHERS            1                       EOEA                 00024
000008       000       DIESEL MARINE            2                       EOEA                 00024
000009       000       BOAT POLICE PATROL       2                       EOEA                 0000203
000010       000       BOAT 14FT ALUM          14    STATEWIDE          EOEA                 0000204
000011       000       BOAT 17FT                4    STATEWIDE          EOEA                 0000204
000012       000       BOAT 19FT                1                       EOEA                 0000204
000013       000       TRLR BOAT               19    STATEWIDE          EOEA                 0000204
000014       000       BATON RIOT              54                       EOEA                 0000301
000015       000       BULLHORN                 3                       EOEA                 0000301
000016       000       PROJECTOR MOTION PIC     9    STATEWIDE          EOEA                 0000401
000017       000       RADIO POLICE            66    STATEWIDE          EOEA                 0000401
000018       000       PROJECTOR SLIDE         30    STATEWIDE          EOEA                 0000401
000019       000       CAMERA STILL             9    STATEWIDE          EOEA                 0000401
000020       000       SCREEN VIEWING          30    STATEWIDE          EOEA                 0000401
000021       000       SCUBA EQUIP SET          1                       EOEA                 0001101
000022       000       DIVERS                   1                       EOEA                 00024

END ELT.
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@ELT,ILD   A,,HANLON
ELTOT7 RLIB70 11/01-14:51:32-(,0)
000001       000
000002       000
000003       000       ITEM DESCRIPTION    QTY        LOCATION            AGCY AC
000004       000
000005       000       RECREATIONAL BOATS       4     STATEWIDE           EQE                0000204
000006       000       TRLR BOAT                4     STATEWIDE           EQE                0000204
000007       000       ENGINEERS               40     BOSTON-STATEWIDE    EQE                00024
000008       000       GEOLOGISTS               1     BOSTON              EQE  1             00024
000009       000       TESTING LABORATORY       1     LAWRENCE            EQE  1             00024
000010       000       STATE PIERS-CARGOCAPABIL 4     STATEWIDE           EQE                00024

END ELT.
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@ELT,ILD   A,,HANLON
ELTOT7 RLIB70 11/01-14:51:33-(,0)
000001      000
000002      000
000003      000       ITEM DESCRIPTION   QTY       LOCATION            AGCY AC
000004      000
000005      000       AIR PACKS                2   FRAMINGHAM          MCDA 1            0000301
000006      000       PROJECTOR MOTION PIC     1   FRAMINGHAM          MCDA 1            0000401
000007      000       TELEPHONES-PBX           4   FRAMINGHAM          MCDA 1            0000401
000008      000       WALKIE-TALKIES          11   FRAMINGHAM          MCDA 1            0000401
000009      000       DRAFT EQUIP SET          1   FRAMINGHAM          MCDA 1            00009
000010      000       MIMEOGRAPH MACH.         1   FRAMINGHAM          MCDA 1            00009
000011      000       MIMEOGRAPH MACH.         1   TEWKSBURY           MCDA 1            00009
000012      000       MIMEOGRAPH MACH.         1   BRIDGEWATER         MCDA 2            00009
000013      000       MIMEOGRAPH MACH.         1   WESTBORO            MCDA 3            00009
000014      000       MIMEOGRAPH MACH.         1   BELCHERTOWN         MCDA 4            00009
000015      000       OFFSET PRESS             2   FRAMINGHAM          MCDA 1            00009
000016      000       REPRO-MACHINE OWNED      1   FRAMINGHAM          MCDA 1            00009
000017      000       REPRO-MACHINE OWNED      1   TEWKSBURY           MCDA 1            00009
000018      000       REPRO-MACHINE OWNED      1   BRIDGEWATER         MCDA 2            00009
000019      000       REPRO-MACHINE OWNED      1   WESTBORO            MCDA 3            00009
000020      000       REPRO-MACHINE OWNED      1   BELCHERTOWN         MCDA 4            00009
000021      000       BEDS                    81   FRAMINGHAM          MCDA 1            00010
000022      000       BEDS                     9   TEWKSBURY           MCDA 1            00010
000023      000       BEDS                     9   BRIDGEWATER         MCDA 1            00010
000024      000       BEDS                     9   WESTBORO            MCDA 3            00010
000025      000       BEDS                     9   BELCHERTOWN         MCDA 4            00010
000026      000       BLANKETS                18   TEWKSBURY           MCDA 1            00010
000027      000       BLANKETS                18   BRIDGEWATER         MCDA 2            00010
000028      000       BLANKETS                18   WESTBORO            MCDA 3            00010
000029      000       BLANKETS                18   BELCHERTOWN         MCDA 4            00010
000030      000       BLANKETS               162   FRAMINGHAM          MCDA 1            00010
000031      000       100 GPM PURIFICATION SET 1   BELCHERTOWN         MCDA 4            00012
000032      000       GENERATOR                4   BELCHERTOWN         MCDA 4            0001502
000033      000       FACILITIES/EQUIP-SETS    1   BELCHERTOWN         MCDA 4            00017
000034      000       CAP. 250 OR MORE         1   FRAMINGHAM          MCDA 1            00018
000035      000       CAP. LESS THAN 50        4   STATEWIDE           MCDA              00018
000036      000       CAPACITY 250 OR LESS     1   FRAMINGHAM          MCDA 1            00019
000037      000       CAPACITY 50 OR LESS      4   AREA HQS            MCDA              00019
000038      000       MCDA TNG CENTER          1   TOPSFIELD           MCDA 1            0002201
000039      000       RADIOLOGICAL MONITOR T7\     FT DEVENS           MCDA 1            00024

END ELT.
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@ELT,ILD   A,,HANLON
ELTOT7 RLIB70 11/01-14:51:40-(,0)
000001       000
000002       000
000003       000         ITEM DESCRIPTION     QTY        LOCATION              AGCY AC
000004       000
000005       000         AIRCRAFT FIXED WING      1      BOSTON                MDC  1                  0000101
000006       000         AMPHIBIOUS-DUCKS         2      STONEHAM              MDC  1                  0000201
000007       000         ROW BOATS                7      DISTRICT STATIONS     MDC                     0000202
000008       000         ROW BOAT                 4      OLD COLONY DISTRICT MDC    1                  0000202
000009       000         ROW BOAT                 3      REVERE DISTRICT       MDC  1                  0000202
000010       000         ROW BOAT                 2      MIDDLESEX FELLS       MDC  1                  0000202
000011       000         ROW BOAT                 5      WESTBORO HDQTS        MDC  3                  0000202
000012       000         ROW BOAT                 1      MCLAUGHLIN CONN VAL MDC    4                  0000202
000013       000         ROW BOAT                 2      BELCHERTOWN CONN VALMDC    4                  0000202
000014       000         ROW BOAT                 1      PALMER CONN VAL       MDC  4                  0000202
000015       000         ROW BOAT                 5      PITTSFIELD W D I      MDC  4                  0000202
000016       000         ROW BOAT                 1      NEWBURY N EAST        MDC  1                  0000202
000017       000         ROW BOAT                 3      BOURNE SO EAST        MDC  2                  0000202
000018       000         ROW BOAT                 1      MEDFORD               MDC  1                  0000202
000019       000         BOAT INFLATABLE          1      WESTBORO HDQTS        MDC  3                  0000202
000020       000         BOAT INFLATABLE          1      BELCHERTOWN CONN VALMDC    4                  0000202
000021       000         BOAT INFLATABLE          1      W BOYLSTON CENTRAL    MDC  3                  0000202
000022       000         BOAT POLICE PATROL       2      BASIN DISTRICT        MDC  1                  0000203
000023       000         BOAT POLICE PATROL       1      UPPER BASIN DISTR     MDC  1                  0000203
000024       000         BOAT POLICE PATROL       2      FELLS DISTRICT        MDC  1                  0000203
000025       000         BOAT POLICE PATROL       2      NANTASKET DISTRICT    MDC  2                  0000203
000026       000         BOAT MOTOR DRIVEN        1      DEER ISLAND           MDC  1                  0000203
000027       000         BOAT MOTOR DRIVEN        1      STONEHAM              MDC  1                  0000203
000028       000         BOAT MOTOR DRIVEN        1      NANTASKET             MDC  2                  0000203
000029       000         CANOE                   52      QUABBIN DISTRICT      MDC  3                  0000204
000030       000         CANOE                    4      WESTBORO HDQTS        MDC  3                  0000204
000031       000         CANOE                    1      PITTSFIELD W DISTRICMDC    4                  0000204
000032       000         SAILBOAT                 7      DISTRICTS             MDC                     0000204
000033       000         TRLR BOAT                8      DISTRICT              MDC                     0000204
000034       000         TRLR BOAT                4      WESTBORO HDQTS        MDC  3                  0000204
000035       000         TRLR BOAT                2      BOURNE S EAST         MDC  2                  0000204
000036       000         TRLR BOAT                1      W BOYALSTON CENTRAL MDC    3                  0000204
000037       000         TRLR BOAT                1      BELCHERTOWN W D C VAMDC    4                  0000204
000038       000         TRLR BOAT                1      MCLAUGHLIN CONN VAL MDC    4                  0000204
000039       000         VEST ARMOR              58      NAHANT                MDC  1                  0000301
000040       000         VEST ARMOR              37      ISSUED                MDC                     0000301
000041       000         VEST ARMOR               4      REVERE                MDC  1                  0000301
000042       000         VEST ARMOR             100      DISTRICTS             MDC                     0000301
000043       000         SHIELD FACE            190      NAHANT                MDC  1                  0000301
000044       000         SHIELD FACE            564      STATEWIDE             MDC                     0000301
000045       000         MASK GAS                90      NAHANT                MDC  1                  0000301
000046       000         MASK GAS               564      DISTRICTS-ISSUED      MDC                     0000301
000047       000         RIFLE SNIPER            24      DISTRICTS             MDC                     0000301
000048       000         LIGHT PORT FLOOD         7      BOSTON STONEHAM       MDC  1                  0000301
000049       000         LIGHT SET PORTABLE       1      WESTBORO FIELD HDQTSMDC    3                  0000301
000050       000         BATON RIOT             182      NAHANT                MDC  1                  0000301
000051       000         LAMB STICKS            312      DISTRICTS-ISSUED      MDC                     0000301
000052       000         LAMB STICK             266      NAHANT                MDC  1                  0000301
000053       000         DISPENSER TEAR GAS       9      NAHANT                MDC  1                  0000301
000054       000         TEAR GAS GRENADES     1266      NAHANT                MDC  1                  0000301
000055       000         BULLHORNS                7      NAHANT                MDC  1                  0000301
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000056	000	BULLHORN	19	DISTRICT	MDC		0000301
000057	000	BULLHORN	13	SOUTH BOSTON	MDC	1	0000301
000058	000	BULLHORN	23	DISTRICTS	MDC		0000301
000059	000	AIR PACK	2	SOUTH BOSTON	MDC	1	0000301
000060	000	AIR PACK	1	DEER ISLAND	MDC	1	0000301
000061	000	AIR PACK	1	WINTHROP	MDC	1	0000301
000062	000	MOTION ANALYZER	1	BLUE HILLS DISTRICT	MDC	2	0000401
000063	000	MOBILE COMMO VANS	1	OLD COLONY DISTRICT	MDC	1	0000401
000064	000	CAMERA MOTION PICTURE	2	WESTBORO FIELD HDQT	MDC	3	0000401
000065	000	PROJECTOR MOTION PIC	3	WESTBORO FIELD HDQTS	MDC	3	0000401
000066	000	PROJECTOR MOTION PIC	1	BELCHERTOWN FIELD HQ	MDC	4	0000401
000067	000	PROJECTOR MOTION PIC	1	MCLAUGHLIN CONN VAL	MDC	4	0000401
000068	000	PROJECTOR MOTION PIC	1	PITTSFIELD W DIST	MDC	4	0000401
000069	000	PROJECTOR MOTION PIC	1	BOYALSTON CENT DIST	MDC	3	0000401
000070	000	PROJECTOR MOTION PIC	1	ACTON N E DISTRICT	MDC	1	0000401
000071	000	PROJECTOR MOTION PIC	1	BOURNE S E DISTRICT	MDC	2	0000401
000072	000	PROJECTOR MOTION PIC	1	FELLS DISTRICT	MDC	1	0000401
000073	000	PROJECTOR MOTION PIC	1	DEER ISLAND	MDC	1	0000401
000074	000	RADIOS-POLICE	118	DISTRICTS	MDC		0000401
000075	000	SCRAPER	5	PARKS-DISTRICTS	MDC		0000501
000076	000	PROJECTOR SLIDE	2	WESTBORO FIELD HDQTS	MDC	3	0000401
000077	000	PROJECTOR SLIDE	1	BELCHERTOWN CONN VAL	MDC	4	0000401
000078	000	PORJECTOR SLIDE	1	MCLAUGHLIN CON VAL	MDC	4	0000401
000079	000	PROJECTOR SLIDE	1	PITTSFIELD W DISTRIC	MDC	4	0000401
000080	000	PROJECTOR SLIDE	1	ACTON N E DISTRICT	MDC	1	0000401
000081	000	PROJECTOR SLIDE	1	BOURNE S E DISTRICT	MDC	2	0000401
000082	000	PROJECTOR SLIDE	1	FELLS DISTRICT	MDC	1	0000401
000083	000	PROJECTOR SLIDE	1	DEER ISLAND	MDC	1	0000401
000084	000	PROJECTOR SLIDE	1	BOSTON	MDC	1	0000401
000085	000	PROJECTOR SLIDE	1	BOYLSTON CENTRAL	MDC	3	0000401
000086	000	CAMERA STILL	17	WESTBORO FIELD HDQT	MDC	3	0000401
000087	000	CAMERA STILL	1	WILBRAHAM CONN VAL	MDC	4	0000401
000088	000	CAMERA STILL	1	BELCHERTOWN CONN VAL	MDC	4	0000401
000089	000	CAMERA STILL	1	PITTSFIELD WEST DIST	MDC	4	0000401
000090	000	CAMERA STILL	1	BOYLSTON CENTRAL	MDC	3	0000401
000091	000	CAMERA STILL	1	ACTON N E DISTRICT	MDC	1	0000401
000092	000	CAMERA STILL	1	BOURNE S E DISTRICT	MDC	2	0000401
000093	000	CAMERA STILL	3	BOSTON	MDC	1	0000401
000094	000	CAMERA STILL	4	MEDFORD	MDC	1	0000401
000095	000	CAMERA STILL	6	BOSTON	MDC	1	0000401
000096	000	TELEPHONES-MOBILE	1	SOUTH BOSTON	MDC	1	0000401
000097	000	TELETYPE	9	DISTRICTS	MDC		0000401
000098	000	CAMERA TV	2	BOSTON	MDC	1	0000401
000099	000	SCREEN VIEWING	1	FELLS DISTRICT	MDC	1	0000401
000100	000	SCREEN VIEWING	2	WESTBORO HDQTS	MDC	3	0000401
000101	000	SCREEN VIEWING	1	BELCHERTOWN CONN VAL	MDC	4	0000401
000102	000	SCREEN VIEWING	1	WILBRAHAM CONN VAL	MDC	4	0000401
000103	000	SCREEN VIEWING	1	ACTON CENTRAL	MDC	1	0000401
000104	000	SCREEN VIEWING	1	BOURNE S E DISTRICT	MDC	2	0000401
000105	000	SCREEN VIEWING	1	PITTSFIELD W DISTRIC	MDC	4	0000401
000106	000	SCREEN VIEWING	1	MCLAUGLIN CONN VAL	MDC	4	0000401
000107	000	SCREEN VIEWING	1	BOSTON	MDC	1	0000401
000108	000	WALKIE TALKIE	2	WESTBORO HDQTS	MDC	3	0000401
000109	000	WALKIE TALKIE	1	ACTON N E DISTRICT	MDC	1	0000401
000110	000	WALKIE TALKIE	64	DISTRICTS	MDC		0000401
000111	000	WALKIE TALKIE	4	NORTHFIELD	MDC	4	0000401
000112	000	BACKHOE	1	NEWBURY N E DISTRICT	MDC	1	0000501

000113	000	BACKHOE	1	WILBRAHAM CONN VAL	MDC	4	0000501
000114	000	BACKHOE	11	STATEWIDE	MDC		0000501
000115	000	BULLDOZERS	1	DEER ISLAND	MDC	1	0000501
000116	000	BULLDOZER	1	BIRCH HILL N E DIST	MDC		0000501
000117	000	BULLDOZER	1	OLD COLONY DISTRICT	MDC	1	0000501
000118	000	BULLDOZER	1	NANTASKET	MDC	2	0000501
000119	000	BULLDOZER	2	STONEHAM	MDC	1	0000501
000120	000	BULLDOZER	1	QUABBIN DISTRICT	MDC	4	0000501
000121	000	CONCRETE MIXERS/HAULERS	2	EAST BOSTON	MDC	1	0000501
000122	000	CRANE	1	EAST BOSTON	MDC	1	0000501
000123	000	CRANE	1	MEDFORD	MDC	1	0000501
000124	000	CRANE	1	STONEHAM	MDC	1	0000501
000125	000	CRANE	1	QUABBIN	MDC	4	0000501
000126	000	DRILLING UNIT	1	BOSTON	MDC	1	0000501
000127	000	DUMP TRUCK	1	SANDWICH S E	MDC	2	0000501
000128	000	DUMP TRUCK	1	PALMER CONN VALLEY	MDC	4	0000501
000129	000	DUMP TRUCK	1	MONTAGUE CONN VAL	MDC	4	0000501
000130	000	DUMP TRUCK			MDC	4	0000501
000131	000	DUMP TRUCK	1	AYER CENTRAL DIST	MDC	1	0000501
000132	000	DUMP TRUCK	1	WILBRAHAM CONN VAL	MDC	4	0000501
000133	000	DUMP TRUCK	1	BOURNE S E DISTRICT	MDC	2	0000501
000134	000	DUMP TRUCK	1	PITTSFIELD W W DIST	MDC	4	0000501
000135	000	DUMP TRUCK	1	ACTON N E DISTRICT	MDC	1	0000501
000136	000	DUMP TRUCK	2	BIRCH HILL CENTRAL	MDC		0000501
000137	000	DUMP TRUCK	91	DISTRICTS	MDC		0000501
000138	000	FORKLIFT	1	W BOYLSTON C W DIST	MDC	3	0000501
000139	000	FORKLIFT	1	BOURNE S E DISTRICT	MDC	2	0000501
000140	000	FRONT LOADER	17	DISTRICTS	MDC		0000501
000141	000	GRADER	1	BELCHERTOWN CONN VAL	MDC	4	0000501
000142	000	SCRAPER	1	QUABBIN DISTRICT	MDC	4	0000501
000143	000	PLOWS	102	DISTRICTS	MDC		0000501
000144	000	PLOW	1	SANDWICH S E DIST	MDC	2	0000501
000145	000	PLOW	1	AYER N E DIST	MDC	1	0000501
000146	000	PLOW	1	BELCHERTOWN CONN VAL	MDC	4	0000501
000147	000	PLOW	1	MCLAUGHLIN CONN VAL	MDC	4	0000501
000148	000	PLOW	1	BIRCH HILL N E DIST	MDC		0000501
000149	000	PLOW	1	WILBRAHAM CONN VAL	MDC	4	0000501
000150	000	PLOW	1	AYER G F N E DIST	MDC	1	0000501
000151	000	PLOW	1	MONTAGUE CONN VAL	MDC	4	0000501
000152	000	PLOW	1	PALMER CONN VAL	MDC	4	0000501
000153	000	LADDERS - 20 FOOT	24	SOUTH BOSTON	MDC	1	0000502
000154	000	LADDER 20FT	1	SUNDERLAND C V W D	MDC	4	0000502
000155	000	LADDER 20FT	1	SAND G F S E W D	MDC	2	0000502
000156	000	LADDER 20FT	1	BELCHERTOWN C V W D	MDC	4	0000502
000157	000	LADDER 20FT	1	W BOYLSTON C W DIST	MDC	3	0000502
000158	000	LADDER 20FT	1	BOURNE S E W D	MDC	2	0000502
000159	000	LADDER 20FT	1	BIRCHILL N E W D	MDC		0000502
000160	000	LADDER 20FT	1	WILBRAHAM G F CON VA	MDC	4	0000502
000161	000	LADDER 20FT	1	AYER G F C W D	MDC	1	0000502
000162	000	LADDER 20FT	1	SANDWICH F H S E W D	MDC	2	0000502
000163	000	FIELD COOKSET	1	AYER N E DIST	MDC	1	0000601
000164	000	DRINK CONTAINERS	2	NAHANT	MDC	1	0000601
000165	000	DRINK CONTAINER	1	WILBRAHAM CONN VAL	MDC	4	0000601
000166	000	DRINK CONTAINER	1	BOURNE S E W DIST	MDC	2	0000601
000167	000	DRINK CONTAINER	1	SANDWICH SAND G F	MDC	2	0000601
000168	000	PUMPER	2	QUABBIN	MDC	4	0000701
000169	000	PUMPS	2	AMELIA EARHART	MDC	1	0000704

000170	000	PUMPS	7	WESTBORO FIELD H Q	MDC	3	0000704
000171	000	PUMPS	6	PITTSFIELD W N DIST	MDC		0000704
000172	000	PUMP	8	SAND G F S E DISTRIC	MDC	2	0000704
000173	000	PUMP	7	BELCHERTOWN CONN VAL	MDC	4	0000704
000174	000	PUMP	10	BOYLSTON CENTRAL	MDC	3	0000704
000175	000	PUMP	7	BIRCH HILL N E DIST	MDC		0000704
000176	000	PUMP	6	WILBRAHAM G F CENTRA	MDC	4	0000704
000177	000	PUMP	7	AYER G F CENTRAL	MDC	1	0000704
000178	000	PUMP	30	SUNDERLAND CONN VAL	MDC	4	0000704
000179	000	PUMP	20	SAND F H S E DIST	MDC	2	0000704
000180	000	PUMP	18	PALMER CONN VAL	MDC	4	0000704
000181	000	PUMP	9	MONTAGUE CONN VAL	MDC	4	0000704
000182	000	PUMP	1	STONEHAM	MDC	1	0000704
000183	000	PUMP	2	SOUTH BOSTON	MDC	1	0000704
000184	000	CAN 5GAL OR MORE	70	SOUTH BOSTON	MDC	1	0000704
000185	000	CIV DIST VEH 1	87	DISTRICTS	MDC		0000708
000186	000	MOTORCYCLES	17	SOUTH BOSTON	MDC	1	0000710
000187	000	SNOWMOBILE	1	BELCHERTOWN CONN VAL	MDC	4	0000711
000188	000	SNOWMOBILE	1	WESTBORO FIELD HDQT	MDC	3	0000711
000189	000	SNOWMOBILE	1	BOYLSTON CENTRAL	MDC	3	0000711
000190	000	SNOWMOBILE	1	ACTON N E DIST	MDC	1	0000711
000191	000	BUSSES	4	OLD COLONY DISTRICT	MDC	1	0000703
000192	000	PRISONER TRANSPORT	7	DISTRICTS	MDC		0000703
000193	000	LOWBOY	3	FELLS DISTRICT	MDC	1	000 705
000194	000	LOWBOY	1	DEER ISLAND	MDC	1	000 705
000195	000	LOWBOY	4	STONEHAM	MDC	1	000 705
000196	000	TRUCK STAKE	1	MIDDLESEX-FELLS	MDC	1	000 706
000197	000	TRUCK STAKE	2	EAST BOSTON	MDC	1	000 706
000198	000	TRUCK STAKE	1	BOSTON	MDC	1	000 706
000199	000	CONTRACTOR TR-W/CRANE	4	STONEHAM	MDC	1	000 706
000200	000	TRUCK MISC	600	STATEWIDE	MDC		000 706
000201	000	SPRAY PAINT SET	1	DEER ISLAND	MDC	1	0000709
000202	000	SPRAY PAINT SET	1	STONEHAM	MDC	1	0000709
000203	000	TOWING VEHICLES	1	SOUTH BOSTON	MDC	1	0000709
000204	000	TOW VEHICLE	1	BOSTON	MDC	1	0000709
000205	000	TOW VEHICLE	2	STONEHAM	MDC	1	0000709
000206	000	VEH REC AIR BASE RESC TRK	1	STONEHAM	MDC	1	0000709
000207	000	WELDING TRUCK	2	STONEHAM	MDC	1	0000709
000208	000	TARGET SET	1	WESTBORO FIELD H Q	MDC	3	00008
000209	000	REPRODUCTION EQUIP	1	WESTBORO FIELD H Q	MDC	3	00009
000210	000	DRAFT EQUIP SET	3	DEER ISLAND	MDC	1	00009
000211	000	DRAFTING TABLES	6	BOSTON	MDC	1	00009
000212	000	DRAFTING TABLE	1	WESTBORO FIELD A Q	MDC	3	00009
000213	000	DRAFTING TABLE	18	BOSTON	MDC	1	00009
000214	000	MAP REPRO EQUIP	1	WESTBORO FIELD H Q	MDC	3	00009
000215	000	MIMEOGRAPH MACHINES	2	BOSTON	MDC	1	00009
000216	000	MIMEOGRAPH MACH.	1	PITTSFIELD W W DIST	MDC	4	00009
000217	000	MIMEOGRAPH MACH.	1	BELCHERTOWN C V DIST	MDC	4	00009
000218	000	MIMEOGRAPH MACH.	1	WESTBORO FIELD H Q	MDC	3	00009
000219	000	MIMEOGRAPH MACH.	1	ACTON N E DISTRICT	MDC	1	00009
000220	000	MIMEOGRAPH MACH.	1	BOURNE S E DISTRICT	MDC	2	00009
000221	000	OFFSET PRESS	1	BOSTON	MDC	1	00009
000222	000	PHOTO LABS	3	MEDFORD	MDC	1	00009
000223	000	PHOTO LAB.	1	WESTBORO FIELD H Q	MDC	3	00009
000224	000	REPRO-MACHINE OWNED	10	DISTRICTS	MDC		00009
000225	000	REPRO-MAHHINE OWNED	1	BOSTON	MDC	1	00009
000226	000	BEDS	45	DISTRICTS	MDC		00010

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000227    000    DRAGGING EQUIPMENT SETS  1   STONEHAM             MDC  1       00011
000228    000    SCUBA EQUIP SET         11   STONEHAM             MDC  1       00011
000229    000    DESALINATION UNITS       1   GEORGES ISLAND       MDC  1       00012
000230    000    DESALINATION UNIT        1   STONEHAM             MDC  1       00012
000231    000    WATER CHLORINE FEED EQ   4   QUABBIN RESERVOIR    MDC  4       00012
000232    000    TRUCK AERIAL BUCKET          MILTON               MDC  2       00013
000233    000    TRUCK AERIAL BUCKET          STONEHAM             MDC  1       00013
000234    000    PIPE-20FT LGTH-SEWERAGE  -   TREATMENT PLANTS     MDC          00013
000235    000    CELLS                   47   DISTRICTS            MDC          00016
000236    000    EMERGENCY GENERATORS     7   DISTRICTS            MDC          0001502
000237    000    GENERATOR EMEG           2   GEORGES ISLAND       MDC  1       0001502
000238    000    GENERATORS               4   QUABBIN RESERVOIR    MDC  4       0001502
000239    000    GENERATOR                1   STONEHAM             MDC  1       0001502
000240    000    FACILITIES/EQUIP-SETS    4   QUABBIN RESERVOIR    MDC  4       00017
000241    000    HANGARS                  1   QUABBIN RESERVOIR    MDC  4       00027
000242    000    HELICOPTER LANDING PAD   1   QUABBIN RESERVOIR    MDC  4       00027
000243    000    DOCKS                    3   HARBOR ISLANDS       MDC  1       00019
000244    000    DOCKS                    1   KELLY,S LANDING      MDC  1       00019
000245    000    MTR-TRANSP. MAJ REPAIR   1   STONEHAM             MDC  1       00021
000246    000    MTR-TRANSP. MAJ REPAIR   1   MILTON               MDC  2       00021
000247    000    MTR-TRANSP. MAJ REPAIR   1   BOSTON               MDC  1       00021
000248    000    MTR-TRANSP. MAJ REPAIR   1   NANTASKET            MDC  2       00021
000249    000    LIGHT REPAIR FACILITY    1   BOSTON               MDC  1       00021
000250    000    HIGH SECURITY AREAS      1   NAHANT               MDC  1       00021
000251    000    CLASSROOM  30 SEAT       1   MIDDLESEX-FELLS      MDC  1       00022
000252    000    MISCELLANEOUS RANGE      1   STONEHAM             MDC  1       00023
000253    000    ANTI-SNIPING TEAMS       6   NAHANT               MDC  1       00024
000254    000    BALLISTICS EXPERTS       3   NAHANT               MDC  1       00024
000255    000    BOMB IDSPOSAL EXPERTS    2   NAHANT               MDC  1       00024
000256    000    CHEMISTS                 5   NUT-DEER ISLANDS     MDC  2       00024
000257    000    CHEMISTS                 4   FRAMINGHAM-BOSTON    MDC  1       00024
000258    000    DIVERS                   6   OLD COLONY DISTRICT  MDC  1       00024
000259    000    DOG HANDLERS             6   STONEHAM             MDC  1       00024
000260    000    EMERGENCY MED TECH.      7   DISTRICTS            MDC          00024
000261    000    ENGINEERS               88   DISTRICTS            MDC          00024
000262    000    GRANT WRITERS            1   BOSTON               MDC  1       00024
000263    000    HORSEMEN                 5   BLUE HILLS           MDC  2       00024
000264    000    HORSEMEN                 5   MIDDLESEX-FELLS      MDC  1       00024
000265    000    LEGAL SPECIALISTS        1   BOSTON               MDC  1       00024
000266    000    MEDICALLY SKILLED PERS ALL    DISTRICTS           MDC          00024
000267    000    PHOTOGRAPHERS            4   BOSTON               MDC  1       00024
000268    000    PLANNERS                 5   BOSTON               MDC  1       00024
000269    000    PUBLIC-COMM REL SPEC     1   BOSTON               MDC  1       00024
000270    000    INDIV CURRENTLY TNG    100   DISTRICTS            MDC          00024
000271    000    SWAT TEAMS               1   NAHANT               MDC  1       00024
000272    000    TRADESMEN-AUTO MECH     20   STONEHAM             MDC  1       00024
000273    000    PLUMBERS                 1   BOSTON               MDC  1       00024
000274    000    CARPENTERS               1   BOSTON               MDC  1       00024
000275    000    ELECTRICIANS             1   BOSTON               MDC  1       00024
000276    000    PAINTERS                 1   BOSTON               MDC  1       00024
000277    000    TRAFFIC MGMT SPEC        3   BOSTON               MDC  1       00024
000278    000    WEAPONS-TACTICS INSTR    6   NAHANT               MDC  1       00024
000279    000    CONCRETE MIXER HAULLER       QUABBIN              MDC          0000501

END ELT.
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@ELT,ILD   A,,HANLON
ELTOT7 RLIB70 11/01-14:52:00-(,0)
000001      000
000002      000
000003      000      ITEM DESCRIPTION    QTY        LOCATION           AGCY AC
000004      000
000005      000      HELICOPTER             48     WESTOVER           MNG  4             0000102
000006      000      HELICOPTER                    BOURNE-OTIS        MNG  2             0000102
000007      000      AIRCRAFT FIXED WING           BOURNE             MNG  2             0000101
000008      000      BOAT INFLATABLE        18     READING            MNG  1             0000202
000009      000      BOAT BRIDGE ERECTION    2     READING            MNG  1             0000204
000010      000      VEST ARMOR           3781     STATEWIDE          MNG                0000301
000011      000      SHIELD FACE          3075     STATEWIDE          MNG                0000301
000012      000      MASK GAS            11363     STATEWIDE          MNG                0000301
000013      000      BINOCULAR ELECTRONIC  458     STATEWIDE          MNG                0000301
000014      000      NIGHT VISION SETS     161     STATEWIDE          MNG                0000301
000015      000      RIFLE SNIPER           64     STATEWIDE          MNG                0000301
000016      000      LIGHT PORT FLOOD       10     STATEWIDE          MNG                0000301
000017      000      GENERAL ILLUM SETS    159     STATEWIDE          MNG                0000301
000018      000      DETECTOR METAL        286     STATEWIDE          MNG                0000301
000019      000      RIOT BATONS          3646     STATEWIDE          MNG                0000301
000020      000      SEARCHLIGHTS            2     FORT DEVENS        MNG  3             0000301
000021      000      DISPENSER TEAR GAS     98     STATEWIDE          MNG                0000301
000022      000      GRENADE TEAR GAS      196     CAMP EDWARDS       MNG  2             0000301
000023      000      GRENADE TEAR GAS    21301     FORT DEVENS        MNG  3             0000301
000024      000      BULLHORN               12     STATEWIDE          MNG                0000301
000025      000      VAN COMMO MOBILE        4     STATEWIDE          MNG                0000401
000026      000      MOTION ANALYZER        18     STATEWIDE          MNG                0000401
000027      000      CAMERA MOTION PICTURE   2     BOSTON             MNG  1             0000401
000028      000      PROJECTOR MOTION PIC   79     STATEWIDE          MNG                0000401
000029      000      PROJECTOR MOTION PIC   79     STATEWIDE          MNG                0000401
000030      000      RADIOS-MILITARY      1976     STATEWIDE          MNG                0000401
000031      000      CAMERA STILL           23     STATEWIDE          MNG                0000401
000032      000      TELEPHONES-MILITARY  1495     STATEWDIE          MNG                0000401
000033      000      TELETYPE               15     STATEWIDE          MNG                0000401
000034      000      TELEX MACHINES          1     BOSTON             MNG  1             0000401
000035      000      TELEX MACH              1     WELLESLEY          MNG  1             0000401
000036      000      TELEX MACH              1     NATICK             MNG  1             0000401
000037      000      SCREEN VIEWING         24     STATEWIDE          MNG                0000401
000038      000      VU GRAPH PROJECTORS    74     STATEWIDE          MNG                0000401
000039      000      BACKHOES                1     WHITMAN            MNG  2             0000501
000040      000      BULLDOZER              14     WHITMAN            MNG  2             0000501
000041      000      BULLDOZER              14     READING            MNG  1             0000501
000042      000      BRIDGE FLOATNG HWY      1     READING            MNG  1             0000501
000043      000      BRIDGE FLOATNG RAFT     1     READING            MNG  1             0000501
000044      000      CRANES                  5     WHITMAN            MNG  2             0000501
000045      000      CRANE                   2     READING            MNG  1             0000501
000046      000      DRILL PNEUMATIC         8     WHITMAN            MNG  2             0000501
000047      000      DUMP TRUCKS            58     READING            MNG  1             0000501
000048      000      DUMP TRUCK             81     READING            MNG  1             0000501
000049      000      DUMP TRUCK             81     WHITMAN            MNG  2             0000501
000050      000      ENGR TOOLS-CARPENTRY  117     STATEWIDE          MNG                0000501
000051      000      TOOL ENG ELEC          53     STATEWIDE          MNG                0000501
000052      000      TOOL PIONEER          168     STATEWIDE          MNG                0000501
000053      000      FORKLIFTS              14     STATEWIDE          MNG                0000501
000054      000      FRONT LOADERS          15     READING            MNG  1             0000501
000055      000      FRONT LOADER           15     WHITMAN            MNG  2             0000501
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000056   000   GRADERS                      3   READING           MNG  1     0000501
000057   000   GRADER                       1   CAMP EDWARDS      MNG  2     0000501
000058   000   PLOW                        10   STATEWIDE         MNG        0000501
000059   000   WRECKING BALL 20 TON         1   WHITMAN           MNG  2     0000501
000060   000     FIELD COOKING SETS       128   STATEWIDE         MNG        0000601
000061   000   OVENS/RANGES               269   STATEWIDE         MNG        0000601
000062   000   AMBULANCES - MILITARY       64   STATEWIDE         MNG        0000701
000063   000   TANKERS - 5000 GALLON        5   FRAMINGHAM        MNG  1     0000704
000064   000   TANKERS 1200 GALLON         27   STATEWIDE         MNG        0000704
000065   000   TRAILERS 600 GALLON         61   STATEWIDE         MNG        0000704
000066   000   PUMP                        14   WORC              MNG  3     0000704
000067   000   PUMP                        14   BOURNE-OTIS       MNG  2     0000704
000068   000   PUMP                        14   WESTFIELD         MNG  3     0000704
000069   000   CANS - 5 GAL OR MORE      1000   STATEWIDE         MNG        0000704
000070   000   ARMORED VEHICLES           132   STATEWIDE         MNG        0000707
000071   000   BUS                         18   STATEWIDE         MNG        0000703
000072   000   LOW BOYS                    20   NATICK            MNG  1     000 705
000073   000   LOWBOY                           READING           MNG  1     000 705
000074   000   TRUCK STAKE                 49   STATEWIDE         MNG        000 706
000075   000   TRUCK STAKE                  1   NATICK            MNG  1     000 706
000076   000   CONTRACTOR TRAILERS         70   STATEWIDE         MNG        000 706
000077   000   TRUCK MISC                2075   STATEWIDE         MNG        000 706
000078   000   TENTAGE                    648   STATEWIDE         MNG        000 706
000079   000   SPRAY PAINTING SETS         18   STATEWIDE         MNG        0000709
000080   000   RAMP TRUCK                  32   STATEWIDE         MNG        0000709
000081   000   TANK RETRIEVERS              5   CAMP EDWARDS      MNG  2     0000709
000082   000   DRAFTING EQUIPMENT SETS 24       STATEWIDE         MNG        00009
000083   000   MAP REPRODUCTION EQUIP       1   BOSTON            MNG  1     00009
000084   000   MIMEOGRAPH MACH.            49   STATEWIDE         MNG        00009
000085   000   OFFSET PRESSES               2   BOSTON            MNG  1     00009
000086   000   OFFSET PRESS                 1   NATICK            MNG  1     00009
000087   000   PHOTO LAB.                   1   BOSTON            MNG  1     00009
000088   000   PHOTO LAB.                   1   OTIS AFB          MNG  2     00009
000089   000   REPRO MACHINES OWNED        14   STATEWIDE         MNG        00009
000090   000   BEDS                       356   READING           MNG  1     00010
000091   000   BEDS                      2923   OTIS AFB          MNG  2     00010
000092   000   1500 GPH PURIFICATION SET4       READING           MNG  1     00012
000093   000   QUALITY CONTROL SETS         4   READING-BOSTON    MNG  1     00012
000094   000   QUALITY CONTROL SET              BOSTON            MNG  1     00012
000095   000   TRAILERS 400 GAL            88   STATEWIDE         MNG        00012
000096   000   POLE CLIMBER SETS           16   REHOBOTH          MNG  2     00013
000097   000   POLE CLIMBER SET                 QUINCY            MNG  2     00013
000098   000   WELDING KITS                23   STATEWIDE         MNG        00013
000099   000   ELECTRICAL TOOL KITS        81   STATEWIDE         MNG        00013
000100   000   LINEMAN TOOL KITS           83   QUINCY            MNG  2     00013
000101   000   CHEMICAL/RD DETEC EQUI1356       STATEWIDE         MNG        00014
000102   000   COMPUTER UNIVAC 1005         1   BOSTON            MNG  1     0002601
000103   000   COMPUTER 1BM 1401 C44        1   NATICK            MNG  1     0002601
000104   000   GENERATOR                  718   STATEWIDE         MNG        0001502
000105   000   CAPACITY 1500 OR MORE            READING           MNG  1     00018
000106   000   CAPACITY 1500 OR MORE        5   OTIS AFB          MNG  2     00018
000107   000   CAPACITY 100 OR MORE        50   STATEWIDE         MNG        00018
000108   000   ARMY AVN SPT FACILITY        1   OTIS AFB          MNG  2     00027
000109   000   ARMY AVN FLIGHT ACTIVITY 1       WESTOVER AFB      MNG  3     00027
000110   000   FLIGHT MAINTENANCE           2   OTIS-AFB          MNG  2     00027
000111   000   FLIGHT MAINTENANCE               WESTOVER AFB      MNG  3     00027
000112   000   HANGER                       2   OTIS-AFB          MNG  2     00027
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000113     000      HANGER                         WESTOVER-AFB          MNG  3            00027
000114     000      HELICOPTER LANDING PADS  4     NATICK-BOSTON-W-TWN   MNG               00027
000115     000      HOUSING CAP. 2000 OR MORE      READING               MNG  1            00019
000116     000      CAPACITY 2000 OR MORE    2     OTIS-AFB              MNG  2            00019
000117     000      PODS-FUEL 800 GAL        6     FRAMINGHAM            MNG  1            00021
000118     000      TANKS - 600 GAL LIQUID   5     STATEWIDE             MNG               00021
000119     000      WAREHOUSES               1     NATICK                MNG  1            00021
000120     000      CLASSROOM  30-50 SEAT   95     STATEWIDE             MNG               00022
000121     000      DEMOLITION RANGES - LT   1     CP EDWARDS            MNG  2            00022
000122     000      DEMOLITION RANGES - HVY  1     CP EDWARDS            MNG  2            00022
000123     000      OFFICER CANDIDATE SCHOOL 1     READING               MNG  1            0002201
000124     000      NONCOMMISSIONED OFF ACAD 1     READING               MNG  1            0002201
000125     000      MISCELLANEOUS RANGES    33     CP EDWARDS-OTIS       MNG               00023
000126     000      CHEM AND RAD DECON TMS  40     STATEWIDE             MNG               00024
000127     000      COMPUTER PROGRAMMERS     5     NATICK-BOSTON         MNG  1            00024
000128     000      DATA PROCESSING SEPC     3     NATICK                MNG  1            00024
000129     000      LABOR-RELATIONS SPEC     1     NATICK                MNG  1            00024
000130     000      ENGINEERS                6     READING-BOSTON        MNG  1            00024
000131     000      LEGAL SPECIALISTS        4     BOSTON                MNG  1            00024
000132     000      MEDICALLY SKILLED SPEC.        BOSTON                MNG  1            00024
000133     000      PHOTOGRAPHERS            6     STATEWIDE             MNG               00024
000134     000      PHYS SECURITY EVAL TMS .       BOSTON                MNG  1            00024
000135     000      PILOTS-HELICOPTER       61     WESTOVER              MNG               00024
000136     000      PILOTS-HELICOPTER       61     OTIS                  MNG               00024
000137     000      PILOT FIXED WING         2     WESTOVER              MNG  3            00024
000138     000      PILOT HEL-FIXED        115     STATEWIDE             MNG               00024
000139     000      PLANNERS                 4     BOSTON                MNG  1            00024
000140     000      PUBLIC-COMM REL SPEC     3     BOSTON                MNG  1            00024
000141     000      RADIOLOGICAL MONITOR TMS 6     STATEWIDE             MNG               00024
000142     000      TROUBLED EMPL COUNSELORS 2     NATICK-BOSTON         MNG  1            00024
000143     000      WEAPONS-TACTICS INSTR  100     STATEWIDE             MNG               00024

END ELT.
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@ELT,ILD   A.,HANLON
ELTOT7 RLIB70 11/01-14:52:06-(,0)
000001       000
000002       000
000003       000        ITEM DESCRIPTION    QTY        LOCATION          AGCY AC
000004       000
000005       000        HELICOPTER                 1   NORWOOD AP        MSP  2            0000102
000006       000        BOAT POLICE PATROL         1   YARMOUTH          MSP  2            0000203
000007       000        BOAT POLICE PATROL         1   DARTMOUTH         MSP  2            0000203
000008       000        BOAT POLICE PATROL         1   BROOKFIELD        MSP  3            0000203
000009       000        BOAT POLICE PATROL         1   NORTHAMPTON       MSP  4            0000203
000010       000        BARRICADE                 12   FRAMINGHAM        MSP  1            0000301
000011       000        SHIELD FACE             1100   STATEWIDE         MSP               0000301
000012       000        MASK GAS                1000   STATEWIDE         MSP               0000301
000013       000        LIGHT SET PORT             1   FRAMINGHAM        MSP  1            0000301
000014       000        LIGHT SET PORTABLE         1   NORTHAMPTON       MSP  4            0000301
000015       000        LIGHT SET PORTABLE         1   MIDDLEBORO        MSP  2            0000301
000016       000        LIGHT SET PORTABLE         1   HOLDEN            MSP  3            0000301
000017       000        BATON RIOT              1100   STATEWIDE         MSP               0000301
000018       000        TEAR GAS DISPERSERS        1   FRAMINGHAM        MSP  1            0000301
000019       000        GRENADE TEAR GAS         150   FRAMINGHAM        MSP  1            0000301
000020       000        BULLHORN                   1   FRAMINGHAM        MSP  1            0000301
000021       000        BULLHORN                   1   NORTHAMPTON       MSP  4            0000301
000022       000        BULLHORN                   1   HOLDEN            MSP  3            0000301
000023       000        BULLHORN                   1   MIDDLEBORO        MSP  2            0000301
000024       000        MOTION ANALYZER          500   STATEWIDE         MSP               0000401
000025       000        VAN COMMO MOBILE           1   FRAMINGHAM        MSP  1            0000401
000026       000        MOTION PICTURE CAMERAS     3   BOSTON            MSP  1            0000401
000027       000        PROJECTOR MOTION PIC       2   FRAMINGHAM        MSP  1            0000401
000028       000        PROJECTOR MOTION PIC       1   BOSTON            MSP  1            0000401
000029       000        RADIO POLICE             800   STATEWIDE         MSP               0000401
000030       000        PROJECTOR SLIDE            3   FRAMINGHAM        MSP  1            0000401
000031       000        CAMERA STILL              40   STATEWDIE         MSP               0000401
000032       000        TELETYPE                  30   STATEWIDE         MSP               0000401
000033       000        CAMERA TV                  4   BOSTON            MSP  1            0000401
000034       000        SCREEN VIEWING             6   FRAMINGHAM        MSP  1            0000401
000035       000        SCREEN VIEWING             3   BOSTON            MSP  1            0000401
000036       000        VU GRAPH PROJ              2   FRAMINGHAM        MSP  1            0000401
000037       000        WALKIE TALKIE            150   STATEWIDE         MSP               0000401
000038       000        PLOW                       1   FRAMINGHAM        MSP  1            0000501
000039       000          STOVES-LIMTED UTENSILS       STATEWIDE         MSP               0000601
000040       000        DRINK CONTAINER            4   FRAMINGHAM        MSP  1            0000601
000041       000        CIV DIST VEH 1             1   FRAMINGHAM        MSP  1            0000708
000042       000        MOTORCYCLE                16   STATEWIDE         MSP               0000710
000043       000        TRUCK STAKE                1   FRAMINGHAM        MSP  1            000 706
000044       000        TRUCK STAKE                1   NORTHAMPTON       MSP  4            000 706
000045       000        TRUCK STAKE                1   HOLDEN            MSP  3            000 706
000046       000        TOW VEHICLE                1   FRAMINGHAM        MSP  1            0000709
000047       000        RAMP TRUCK                 2   FRAMINGHAM        MSP  1            0000709
000048       000        MIMEOGRAPH MACH.           1   BOSTON            MSP  1            00009
000049       000        OFFSET PRESS               2   BOSTON            MSP  1            00009
000050       000        PHOTO LAB.                 1   BOSTON            MSP  1            00009
000051       000        PHOTO LAB.                 1   TOPSFIELD         MSP  1            00009
000052       000        PHOTO LAB                  1   NORTHAMPTON       MSP  4            00009
000053       000        PHOTO LAB.                 1   HOLDEN            MSP  3            00009
000054       000        PHOTO LAB.                 1   MIDDLEBORO        MSP  1            00009
000055       000        REPRO-MACHINE OWNED        1   CONCORD           MSP  1            00009
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000056   000   REPRO-MACHINE OWNED          1   FRAMINGHAM    MSP  1   00009
000057   000   REPRO-MACHINE OWNED          1   NORTHAMPTON   MSP  4   00009
000058   000   REPRO-MACHINE OWNED          1   MIDDLEBORO    MSP  2   00009
000059   000   BEDS                       180   STATEWIDE     MSP      00010
000060   000   BLANKETS                   360   STATEWIDE     MSP      00010
000061   000   DRAGGING EQUIP SET           1   BROOKFIELD    MSP  4   00011
000062   000   DRAGGING EQUIP SET           1   YARMOUTH      MSP  2   00011
000063   000   DRAGGING EQUIP SET           1   DARTMOUTH     MSP  2   00011
000064   000   DRAGGING EQUIP SET           1   NORTHAMPTON   MSP  4   00011
000065   000   SCUBA EQUIP SET              6   LOGAN IAP     MSP  1   00011
000066   000   COMPUTER B5500               2   BOSTON        MSP  1   0002601
000067   000   CELLS                       54   STATEWIDE     MSP
000068   000   GENERATORS - AUXILARY       29   STATEWIDE     MSP      0001501
000069   000   GENERATOR                    2   FRAMINGHAM    MSP  1   0001502
000070   000   GENERATOR                    2   NORTHAMPTON   MSP  4   0001502
000071   000   GENERATOR                    2   HOLDEN        MSP  3   0001502
000072   000   GENERATOR                    2   MIDDLEBORO    MSP  2   0001502
000073   000   CAPACITY LESS THAN 50       30   STATEWIDE     MSP      00018
000074   000   MINOR REPAIR AREAS           9   STATEWIDE     MSP      00021
000075   000   CLASSROOMS-55 SEAT           5   FRAMINGHAM    MSP  1   00022
000076   000   GYMNASIUMS                   1   FRAMINGHAM    MSP  1   00022
000077   000   STATE POLICE ACADAMY         1   FRAMINGHAM    MSP  1   0002201
000078   000   MISCELLANEOUS RANGE          1   FRAMINGHAM    MSP  1   00023
000079   000   MISCELLANEOUS RANGE          1   SOUTHBORO     MSP  3   00023
000080   000   ANTI-SNIPING TEAMS           4   STATEWIDE     MSP      00024
000081   000   BALISTIC EXPERTS             5   BOSTON        MSP  1   00024
000082   000   BOMB DISPOSAL EXPERTS       11   STATEWIDE     MSP      00024
000083   000   CHEMISTS                    12   BOSTON        MSP  1   00024
000084   000   COMPUTER PROGRAMMERS        35   BOSTON        MSP  1   00024
000085   000   DOG HANDLERS                 1   NORTHAMPTON   MSP  4   00024
000086   000   DOG HANDLERS                 1   MIDDLEBORO    MSP  2   00024
000087   000   DOG HANDLERS                 3   FRAMINGHAM    MSP  1   00024
000088   000   EXPLOSIVE SCENT DOG          2   LOGAN IAP     MSP  1   00024
000089   000   MARIJUANA SCENT DOG          1   LOGAN IAP     MSP  1   00024
000090   000   EMERGENCY MED TECH -EMT      6   STATEWIDE     MSP      00024
000091   000   LABOR-RELATIONS SPEC.        1   BOSTON        MSP  1   00024
000092   000   LABOR-RELATIONS SPEC.        1   FRAMINGHAM    MSP  1   00024
000093   000   FORENSIC MEDICINE SPEC       4   BOSTON        MSP  1   00024
000094   000   GRANT WRITERS                1   BOSTON        MSP  1   00024
000095   000   MEDICALLY SKILLED SPEC.          STATEWIDE     MSP  1   00024
000096   000   MEDICALLY SKILLED SPEC.          FRAMINGHAM    MSP  1   00024
000097   000   PHOTOGRAPHERS               20   STATEWIDE     MSP      00024
000098   000   PHYSICAL FITNESS SPEC       14   FRAMINGHAM    MSP  1   00024
000099   000   PILOTS-HELICOPTER            4   NORWOOD AP    MSP  2   00024
000100   000   PILOTS -FIXED WING           3   STATEWIDE     MSP      00024
000101   000   PLANNERS                     2   BOSTON        MSP  1   00024
000102   000   PUBLIC-COMM REL SPEC         3   BOSTON        MSP  1   00024
000103   000   INDIV CURRENTLY TRNG       700   STATEWIDE     MSP      00024
000104   000   SWAT TEAMS                   4   STATEWIDE     MSP      00024
000105   000   RADIO REPAIRMEN             13   STATEWIDE     MSP      00024
000106   000   TRAFFIC MGMT SPEC            4   STATEWIDE     MSP      00024
000107   000   WEAPONS-TACTICS INSTR        5   FRAMINGHAM    MSP  1   00024
000108   000   BUS                          2   FRAMINGHAM    MSP  1   0000703
000109   000   TRUCK STAKE                  1   MIDDLEBORO    MSP  2   000 706
000110   000   REPRO-MACHINE OWNED          1   HOLDEN        MSP  3   00009

END ELT.
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@ELT,ILD   A,,HANLON
ELT0T7 RLIB70 11/01-14:52:11-(,0)
000001      000
000002      000
000003      000        ITEM DESCRIPTION    QTY        LOCATION          AGCY AC
000004      000
000005      000        BOAT POLICE PATROL      11     BOSTON            MRV  1               0000203
000006      000        BOAT POLICE PATROL             FALL RIVER        MRV  2               0000203
000007      000        BOAT POLICE PATROL             GLOUCESTER        MRV  1               0000203
000008      000        PROJECTOR MOTION PIC     2     BOSTON            MRV  1               0000401
000009      000        PROJECTOR SLIDE          4     BOSTON            MRV  1               0000401
000010      000        WALKIE TALKIE           10     BOSTON            MRV  1               0000401
000011      000        SNOWMOBILES             13     STATEWIDE         MRV                  0000711
000012      000        DIVERS                   2     STATEWIDE         MRV                  00024
000013      000        PILOT FIXED WING         1     MANCHESTER        MRV  1               00024
000014      000        SEARCH - RESCUE TEAMS   11     STATEWIDE         MRV                  00024

END ELT.
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@ELT,ILD   A,,HANLON
ELTOT7 RLIB70 11/01-14:52:13-(,0)
000001       000
000002       000
000003       000        ITEM DESCRIPTION    QTY      LOCATION          AGCY AC
000004       000
000005       000        SHIELD FACE             20   STATEWIDE         RMV                 0000301
000006       000        LIGHT SET PORTABLE       4   STATEWIDE         RMV                 0000301
000007       000        BATON RIOT             350   STATEWIDE         RMV                 0000301
000008       000        CHEMICAL MACE           40   STATEWIDE         RMV                 0000301
000009       000        BULLHORN                 1   BOSTON            RMV  1              0000301
000010       000        MOTION ANALYZER         74   STATEWIDE         RMV                 0000401
000011       000        VAN COMMO MOBILE         1   BOSTON            RMV  1              0000401
000012       000        RADIO POLICE             4   STATEWIDE         RMV                 0000401
000013       000        RADIO POLICE             1   MILTON            RMV  2              0000401
000014       000        RADIO POLICE             1   TOPSFIELD         RMV  1              0000401
000015       000        PROJECTOR SLIDE          2   BOSTON            RMV  1              0000401
000016       000        CAMERA STILL             5   STATEWIDE         RMV                 0000401
000017       000        TELEPHONES-EMERGENCY     4   BOSTON            RMV  1              0000401
000018       000        TELETYPE                38   STATEWIDE         RMV                 0000401
000019       000        TELEX MACH               1   BOSTON            RMV  1              0000401
000020       000        WALKIE TALKIE           16   BOSTON            RMV  1              0000401
000021       000        CIV DIST VEH 1 CRUISERS 68   STATEWIDE         RMV                 0000708
000022       000        MOTRCYCLE                3   STATEWIDE         RMV                 0000710
000023       000        MIMEOGRAPH MACH.         2   BOSTON            RMV  1              00009
000024       000        REPRO-MACHINE OWNED      2   BOSTON            RMV  1              00009
000025       000        GENERATOR                3   STATEWIDE         RMV                 0001502
000026       000        DATA PROCESSING SPEC    11   BOSTON            RMV  1              00024
000027       000        EMERGENCY MED TECH.     17   STATEWIDE         RMV                 00024
000028       000        LABOR-RELATIONS SPEC.    1   BOSTON            RMV  1              00024
000029       000        LEGAL SPECIALISTS        2   BOSTON            RMV  1              00024
000030       000        PHOTOGRAPHERS           24   STATEWIDE         RMV                 00024
000031       000        PLANNERS                 3   BOSTON            RMV  1              00024
000032       000        SEARCH - RESCUE TEAMS    4   BOSTON            RMV  1              00024
000033       000        COMPUTER  CDC-3300       2   BOSTON            RMV  1              0002601

END ELT.

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Attachment B.10-2
Page 1 of 8

MASSACHUSETTS CIVIL DEFENSE AGENC
AND OFFICE OF EMERGENCY PREPAREDNESS
400 Worcester Road Framingham, Mass. 01701

RADIOLOGICAL EQUIPMENT INVENTORY

SUMMARY

INSTRUMENT TYPE	LOCALLY ASSIGNED	FLOAT	TOTAL
CD V-700	1918	5169	7087
CD V-705		202	202
CD V-711		3	3
CD V-715	4788	7578	12366
CD V-717	2039	291	2330
CD V-720	982	24	1006
CD V-750	1103	8678	9781
CD V-781		10	10
DOSIMETERS			
CD V-138	2605	400	3005
CD V-730	2398	24	2422
CD V-740	2395	24	2419
CD V-742	21656	52211	73867

MASSACHUSETTS CIVIL DEFENSE AGENCY

AND OFFICE OF EMERGENCY PREPAREDNESS

400 Worcester Road Framingham, Mass. 01701

INVENTORY OF LOCALLY ASSIGNED RADIOLOGICAL EQUIPMENT

LOCALITY OR NETWORK AGENCY	NUMBER ASSIGNED 777	777-1	742
Avon	1	0	0
Braintree	8	14	100
Canton	4	15	50
Cohasset	4	2	25
Dedham	3	20	100
Foxboro	5	10	50
Hingham	9	5	50
Holbrook	3	1	0
Hull	2	1	0
Medfield	1	5	0
Millis	2	0	0
Milton	5	8	50
Norfolk	4	1	25
Norwood	4	4	100
Randolph	3	6	50
Sharon	8	4	50
Stoughton	3	3	0
Walpole	10	5	50
Westwood	8	2	0
Weymouth	3	11	0
Sector 2D Hdqrtrs	0	0	1050
TOTAL	90	117	1750

LOCALITY OR NETWORK AGENCY	NUMBER ASSIGNED 777	777-1	742
Barnstable (Hyannis)	10	14	150
Bourne	4	7	150
Brewster	1	0	30
Chatham	2	0	30
Dennis	1	1	30
Eastham	1	0	30
Falmouth	5	10	150
Harwich	2	3	30
Mashpee	0	1	0
Nantucket	0	4	0
Orleans	3	3	60
Provincetown	2	4	60
Sandwich	2	1	50
Wellfleet	1	0	0
Yarmouth	4	0	0
MBTA	0	45	0
Area 2 Hdqtrs	0	0	1500
Sector 2C Hdqrtrs	0	0	620
Navy, Fargo Bldg	6	0	0
Navy, Charlstown	15	16	0
Navy Yard			
TOTAL	59	109	2890

MASSACHUSETTS CIVIL DEFENSE AGENCY
AND OFFICE OF EMERGENCY PREPAREDNESS
400 Worcester Road Framingham, Mass. 01701

INVENTORY OF LOCALLY ASSIGNED RADIOLOGICAL EQUIPMENT

LOCALITY OR NETWORK AGENCY	NUMBER ASSIGNED 777	777-1	742
Quincy	20	65	350
Reading	6	13	120
Somerville	3	74	570
Area 1 Hdqrtrs	0	0	3000
Sector 1D Hdqrtrs	0	0	1641
TOTAL	29	152	5681

LOCALITY OR NETWORK AGENCY	NUMBER ASSIGNED 777	777-1	742
Worcester	10	254	1500
Otis AFB	10	0	0
TOTAL	20	254	1500

MASSACHUSETTS CIVIL DEFENSE AGENCY

AND OFFICE OF EMERGENCY PREPAREDNESS

400 Worcester Road   Framingham, Mass. 01701

INVENTORY OF LOCALLY ASSIGNED RADIOLOGICAL EQUIPMENT

LOCALITY OR NETWORK AGENCY	NUMBER ASSIGNED 777	777-1	742
Bellingham	4	2	44
Blackstone	3	0	33
Douglas	4	4	16
Franklin	4	6	68
Grafton	4	12	69
Holliston	5	1	40
Hopedale	3	0	25
Hopkinton	4	0	32
Medway	3	1	33
Mendon	2	0	13
Milford	4	13	102
Millbury	3	2	62
Millville	2	1	10
Northboro	4	0	50
Northbridge	2	8	70
Shrewsbury	4	7	107
Southboro	4	2	25
Sutton	4	3	23
Upton	4	1	22
Uxbridge	2	3	50
Westboro	4	43	62
Wrentham	2	27	43
EBS	17	0	0
TOTAL	92	136	999

LOCALITY OR NETWORK AGENCY	NUMBER ASSIGNED 777	777-1	742
Agawam	4	8	50
Chester	2	0	25
Granville	2	0	25
Holyoke	13	73	200
Montgomery	2	9	0
Russell	1	3	25
Southwick	2	1	0
Westfield	6	27	100
West Springfield	4	13	50
TOTAL	36	125	475

MASSACHUSETTS CIVIL DEFENSE AGENCY

AND OFFICE OF EMERGENCY PREPAREDNESS

400 Worcester Road Framingham, Mass. 01701

INVENTORY OF LOCALLY ASSIGNED RADIOLOGICAL EQUIPMENT

LOCALITY OR NETWORK AGENCY	NUMBER ASSIGNED		
	777	777-1	742
Chelmsford	9	4	102
North Reading	5	1	59
Tewksury	0	11	96
Wakefield	0	10	150
Wilmington	5	8	0
Winchester	10	10	126
Tennessee Gas	2	0	0
Dept of Public Works	24	0	0
Western Mass Electric	4	0	0
NEGA	6	0	0
New England Power	12	0	0
TOTAL	77	44	533

LOCALITY OR NETWORK AGENCY	NUMBER ASSIGNED		
	777	777-1	742
Auburn	6	3	84
Charlton	0	6	25
Dudley	5	3	39
East Brookfield	2	0	9
Leicester	2	6	48
North Brookfield	5	4	21
Oxford	6	4	54
Southbridge	7	20	99
Spencer	3	3	48
Sturbridge	0	2	0
Warren	2	0	20
West Brookfield	6	0	12
Webster	7	11	100
TOTAL	51	62	559

MASSACHUSETTS CIVIL DEFENSE AGENCY

AND OFFICE OF EMERGENCY PREPAREDNESS

400 Worcester Road Framingham, Mass. 01701

INVENTORY OF LOCALLY ASSIGNED RADIOLOGICAL EQUIPMENT

LOCALITY OR NETWORK AGENCY	NUMBER ASSIGNED 777	777-1	742
Billerica	5	12	120
Malden	11	42	354
Medford	10	42	385
Met Dist Comm	28	0	0
State Police	35	0	0
TOTAL	63	96	859

LOCALITY OR NETWORK AGENCY	NUMBER ASSIGNED 777	777-1	742
Brimfield	4	0	6
Chicopee	18	39	366
East Longmeadow	0	2	0
Hampden	4	0	12
Longmeadow	6	3	60
Ludlow	7	2	78
Monson	4	2	0
Palmer	8	9	102
Springfield	17	131	982
Wilbraham	3	0	4[illegible]
TOTAL	77	189	1654

MASSACHUSETTS CIVIL DEFENSE AGENCY

AND OFFICE OF EMERGENCY PREPAREDNESS

400 Worcester Road Framingham, Mass. 01701

INVENTORY OF LOCALLY ASSIGNED RADIOLOGICAL EQUIPMENT

LOCALITY OR NETWORK AGENCY	NUMBER ASSIGNED 777	777-1	742
Boston	0	150	4000
Ashfield	3	1	0
Bernardston	3	0	0
Charlemont	5	0	0
Erving	4	1	0
Gill	1	3	0
Greenfield	8	17	0
Heath	1	0	0
Leverett	1	0	0
Montague	6	3	0
Northfield	3	7	0
Rowe	1	1	0
Shelburne	5	1	0
Sunderland	3	2	0
Warwick	1	0	0
Wendell	2	0	0
Whately	2	1	0
Yankee Atomic, Rowe	1	0	0
Boston Edison	19	0	0
TOTAL	71	187	4000

LOCALITY OR NETWORK AGENCY	NUMBER ASSIGNED 777	777-1	742
Burlington	2	3	50
Dracut	5	2	108
Everett	0	18	264
Lynnfield	0	2	59
Melrose	0	15	174
Stoneham	0	7	104
Woburn	1	10	192
TOTAL	8	57	951

DEPARTMENT OF PUBLIC HEALTH
RADIOLOGICAL EQUIPMENT INVENTORY
IN MASSACHUSETTS

	LABORATORY EQUIPMENT			FIELD EQUIPMENT			
STATE	GROSS ALPHA	GROSS BETA	GAMMA SCAN	ALPHA	BETA GAMMA	G.M.	NEUTRON
MASS.	1 PC	1 PC 2 LBBC		5 Scintillation 0-2,000,000 cpm.	2 Jordan Radgun 0-10 KR/hr	1 Victoreen 440 0-300 R/hr.	1 Fast Neutron Survey Meter
				2 Juno Alpha, Beta, Gamma 0-25 R/hr	1 Victoreen 440RF 0-300 mR/hr	1 Victoreen 498 0-1 R/hr	
					1 Victoreen 470 0-1000 R/hr	12 Drill Hole 0-20 mR/hr	
					7 Cutie Pie Ion Chambers 0-250 R/hr		
					13 Ion Chambers 0-250 R/hr		

OTHER EQUIPMENT

Mass. - Pocket Dosimeters, Protective Clothing, Respirators, Hoods, Gloves, Decontamination Solution, Marking Rope, etc.

AMBULANCE SERVICES

8/1/79

hief John V. Polio
raintree Police Department
82 Union Street
raintree, MA 02184

hief William C. Kardas
edham Pplice Department
00 High Street
edham, MA 02026

hief Fletcher Patch
ingham Fire Department
39 Main Street
ingham, MA 02043

r. Ronald B. Forance
arlboro-Hundson Amb. Service
Kathleen Road
[illegible]n, MA 01749

hief George J. Smith, Jr.
illis Police Ambulance
85 Main Street
illis, MA 02054

hief Richard D. Fahey
atick Fire Department
2 Summer Street
atick, MA 01760

hief William F. Quinn
ewton Police Department
321 Washington St.
est Newton, MA 02165

hief Thomas J. Barry
own of Norwood Amb. Serv.
ire Headquarters
ahatan St.
or[illegible]od, MA 02062

hief Edward F. Brock
outhborough Fire Department
Main St.
outhborough, MA 01772

Chief James A. Fitzpatrick
Town of Canton Ambulance Service
Revere Street
Canton, MA 02021

Mr. Willis Chaulk
Chaulk Services, Inc.
7 Main Street
Framingham, MA 01707

Chief John M. Feehely
Holliston Fire Department
Central St.
Hollisont, MA 01746

Acting Chief Walter J. Haley
Hull Fire Department
671 Nantasket Avenue
Hull, MA 02045

Mr. James R. Fallon, President
Fallon Ambulance Service
95 Eliot St.
Milton, MA 02187

Deputy Chief Frederick Gibsen
Needham Ambulance Service
88 School St.
Needham, MA 02192

Chief James H. Cribby
Town of Norfolk Ambulance Serv.
117 Main St.
Norfolk, MA 02056

Chief C. E. Skinner
Plainville Fire Department
157 South St.
Plainville, MA 02762

Chief James A. Polito
Town of Sharon Ambulance Serv.
90 South Main St.
Sharon, MA 02067

Chief Charles Piepenbrink
Cohasset Fire Department
44 Elm Street
Cohasset, MA 02025

Chief John J. Hancock
Framingham Fire Department
520 Concord St.
Framingham, MA 01701

Chief Arthur Stewart
Hopkinton Fire Department
73 Main St.
Hopkinton, MA 01748

Chief William H. Mann
Medfield Police Department
110 North Street
Medfield, MA 02052

Chief Dennis Doyle
Milton Police Department
40 Highland Street
Milton, MA 02186

Mr. Howard B. Hathaway
Newton-Wellesley Ambulance
1235 Washington St.
West Newton, MA 02165

Mr. Charles B. Clarke
Northboro Ambulance Committee
(Town of Northboro Amb. Serv.)
11 Church St.
Northboro, MA 01532

Chief Armando J. Betro
Town of Walpole Amb. Serv.
2 Stone St.
Walpole, MA 02081

Chief Walter Driscoll
Scituate Police Department
604 Chief Justice Cushing Hghw
Scituate, MA 02066

Chief Robert D. Teece
Randolph Fire Department
Memorial Parkway
Randolph, MA 02368

Chief John E. Thorburn
Weston Fire Department
394 Boston Post Road
Weston, MA 02193

Chief Ronald E. Profit
Wayland Fire Department
Millbrook Road
Wayland, MA 01778

Chief Wallace O. Pearson
Protection Fire Company
Central St.
Byfield, MA 01922

Chief Douglas Warren
Boxford Police Department
285 Ipswich Road
Boxford, MA 01921

Chief Richard L. Lacey
Lawrence Fire Department
65 Lowell St.
Lawrence, MA 01840

Chief George Rogers
Westford Fire Department
4 Boston Road
Westford, MA 01886

Mr. Ronald Pick
American Ambulance & Medical
Rescue Service
111 Quebec St.
Lowell, MA 01852

Captain David Jones
Barnstable Fire District
3249 Main St.
Barnstable, MA 02630

Fire Chief Gordon E. Sylver
Brewster Rescue Squad
Main St.
Brewster, MA 02631

Chief Francis X. Finn
Quincy Police Department
442 Southern Artery
Quincy, MA 02169

Chief Harry F. Shepherd
Westboro Police Department
Town Hall
Westboro, MA 01581

Chief John Biskupski
Ashland Fire Department
Main St.
Ashland, MA 01721

Deputy Chief Lee
Billerica Police Department
Concord Road
Billerica, MA 01821

Chief Louis Burton
Haverhill Fire Department
141 Water St.
Haverhill, MA 01830

Chief James Fitzgerald
North Andover Fire Department
124 Main St.
North Andover, MA 01845

Mr. Peter F. Poor
Carleton Ambulance Serv., Inc.
3 Railroad St.
Newburyport, MA 01984

Chief John Casey
Abington Fire Department
1040 Bedford St.
Abington, MA 02351

Chief James Barrow
Town of Berkley Fire Department
North Main St.
Berkley, MA 02780

Chief Edward L. Burrell
Brockton Fire Department
42 Pleasant St.
Brockton, MA 02401

Chief J. Herbert Wiggin
Westwood Fire Department
637 High St.
Westwood, MA 02090

Chief Leroy L. Weaver
Wellesley Police Department
485 Washington St.
Wellesley, MA 02181

Fire Chief Arthur R. Gaudet
Town of Amesbury
17 School St.
Amesbury, MA 01913

Chief William Downs
Andover Fire Department
32 North Main St.
Andover, MA 01810

Chief Clifford Duhamel
Methuen Fire Department
24 Lowell St.
Methuen, MA 01844

Chief William Chandler
Tewksbury Fire Department
Town Hall Ave.
Tewksbury, MA 01876

Mr. Frederick J. Shanahan
Shanahan's Ambulance Service
101 Winter St.
Haverhill, MA 01230

Chief Michael Poitras
Acushnet Police Department
130 Main St.
Acushnet, MA 02743

Chief Richard V. Raymond
Bourne Fire Department
130 Main St.
Buzzards Bay, MA 02532

Chief Thomas Orr
Carver Police Department
Town Hall-Main Street
Carver, MA 02330

Chief Robert C. Greenough
Chatham Fire Department
70 Depot Road
Chatham, MA 02633

Acting Chief Anthony Parker
Chilmark Police Department
Beetlebung Corners
Chilmark, MA 02535

Chief John Newton
Cotuit Fire Department
64 High Street
Cotuit, MA 02635

Chief Robert S. Hersey
Dennis Fire Department
883 Main St.
West Dennis, MA 02670

Chief Joseph T. White
Dighton Fire Department
300 Main St.
Dighton, MA 02715

Chief Howard Blanchard
Duxbury Fire Department
668 Tremont St.
Duxbury, MA 02332

Chief Robert K. Windsor
East Bridgewater Fire Dept.
268 Bedford St.
East Bridgewater, MA 02333

Chief James McCormack
Eastham Fire Department
Route 6
Eastham, MA 02642

Chief Bruce D. Pratt
Edgartown Police Dept.
Main St.
Edgartown, MA 02539

Mr. Augustus Santos, Director
Fairhaven Civil Defense
99 Middle St.
Fairhaven, MA 02719

Chief Peter F. Barcellos
Fairhaven Police Department
1 Bryant Land
Fairhaven, MA 02719

Mr. Roland G. Bileau
Fall River Ambulance Serv.
d/b/a Edgar's Ambulance Serv.
1680 North Main St.
Fall River, MA 02720

Chief Louis A. Shea, Jr.
Fall River Fire Department
Office of Emergency Med. Serv.
755 Pine St.
Fall River, MA 02720

Chief James F. Rogers
Falmouth Fire Department
399 Main St.
Falmouth, MA 02540

Chief Thomas F. Sheehan
Foxborough Fire Department
40 Shcool St.
Foxboro, MA 02035

Chief Linwood Copeland
Freetown Fire Department
157 County Road
East Freetown, MA 02717

Chief Charles A. Hall
Harwich Fire Department
Bank St.
Harwich, MA 02645

Acting Chief William Marble
Holbrook Fire Department
South St.
Holbrook, MA 02343

Chief Glenn B. Clough
Hyannis Fire Department
95 High School Road, Ext.
Hyannis, MA 02601

Chief Thomas Leonard
Mansfield Fire Department
291 North Main St.
Mansfield, MA 02048

Mr. James S. Dougall
Marion Emergency Medical Serv
50 Spring St.
Marion, MA 02738

Lt. William Sullivan
Marshfield Police Department
1639 Ocean St.
Marshfield, MA 02050

Chief Gregory J. Willis
Mashpee Fire Department
Route 130
Mashpee, MA 02649

Chief D. Murray Tuttle
Mattapoiset Police Department
1 Church St.
Mattapoisett, MA 02739

Mr. Robert L. Demers
Hayward Ambulance Service
81 Taunton St.
Middleborough, MA 02346

Chief William E. Warner
Middleborough Police Department
99 North Main St.
Middleborough, MA 02346

Mr. David S. Junier
Geroge N. Alden Amb. Corps.
109 Hillman St.
New Bedford, MA 02740

Fire Chief Lester Caldwell
Town of North Attleboro
Ambulance Service
50 Elm St.
North Attleboro, MA 02760

Chief Martin Jordan
Town of Norton Ambulance
25 South Worcester St.
Charley, MA 02712

Chief Warren P. Merritt
Civil Defense Ambulance
Town of Norwell
677 Main St.
Norwell, MA 02061

Chief Peter M. Williamson
Oak Bluffs Police Department
Oak Bluffs Avenue
Oak Bluffs, MA 02557

Mr. James Edward Nickols
Orleans-Eastham Ambulance
Association, Inc.
Eldredge Parkway
Orleans, MA 02653

Chief Lawrence L. Ellis
Orleans Rescue Squad
Route 28
Orleans, MA 02653

Chief Jon J. Alberghini
Kingston Fire Department
10 Maple St.
Kingston, MA 02346

Mr. Daniel J. Crokett
Shore Ambulance Service
1119 Bedford St.
Abington, MA 02351

Mr. James J. Meads
Lower Cape Ambulance Associat
Town Hall
Provincetown, MA 02657

Chief M. Cook
Provincetown Fire Department
Rescue Squad
Johnson St.
Provincetown, MA 02657

Chief Theodore Januse
Raynham Fire Department
Orchard St.
Raynham, MA 02767

Mr. Conrad Bernier
Rochester Ambulance Service
Hartley Road
Rochester, MA 02770

Chief Ferdinand L. Alvezi
Sandwich Fire Department
Route 6A
Sandwich, MA 02563

Chief John E. Shaw
Seekonk Fire Department
211 Newman Ave.
Seekonk, MA 02771

Chief Leonel Parent
Somerset Fire Department
475 County St.
Somerset, MA 02726

Chief Paul J. Roach
SToughton Fire Department
30 Freeman St.
Stoughton, MA 02072

Chief Arlan E. Thomas
Swansea Ambulance Corps.
69 Louis St.
Swansea, MA 02777

Chief Raymond Maciel
Tisbury Police Department
Off Main St.
Tisbury, MA 02568

Chief Raymond Joseph
Town of Truro Rescue Squad
Route 6, P.O. Box 333
Truro, MA 02666

Chief Irving Fisher
Town of Wareham Fire Department
P.O. Box 171
Wareham, MA 02558

Chief Engineer, Warren F. Dye
Wellfleet Fire Department
Commercial St.
Wellfleet, MA 02667

Chief John P. Jenkins
West Barnstable Fire Department
1633 Main St.
Route 6A
West Barnstable, MA 02668

Chief George Manter
West Tisbury Police Dept.
West Tisbury, MA 02575

Chief Gerald DiMestico
Whitman Fire Department
Temple St.
Whitman, MA 02382

Mr. Richard Shaughnessy
Cape Cod Ambulance, Inc.
Box 301
South Yarmouth, MA 02664

Chief John J. Clemence
Yarmouth Fire Department
96 Main St.
South Yarmouth, MA 02664

Chief John M. Farrington
Centerville-Osterville Fire
Department, 999 Main St.
Osterville, MA 02655

Mr. Ricahrd L. Buttermore
Town of Lakeville Civil Defense
Bedford St.
Lakeville, MA 02346

Chief Kenneth Belain
Gay Head Police Department
State Road
Gay Head, MA 02535

Chief George F. Dean
Westport Fire Department
85 Birggs Road
Westport, MA 02790

Mr. John V. O'Brien
O'Brien's Ambulance Serv., Inc.
263 Rantoul St.
Beverly, MA 01915

Mr. Kevin M. Lyons
Lyons Ambulance Service
28 Elm St.
Danvers, MA 01923

Chief Ivan Muise
Essex Fire Department
Martin St.
Essex, MA 01929

Chief Donald T. Bontempo
[illegible]rett Police Department
[illegible] Broadway
Everett, MA 02149

Mr. Frank J. Eckert
Nordstrom's Ambulance Serv., Inc.
59 North Franklin St.
Lynn, MA 01904

Mr. Michael Kotzen
Bay State Ambulance Service
163 Eastern Avenue
Malden, MA 02148

Fire Chief George W. Nash
Town of Middleton Ambulance
Service, Fire Headquarters
4 Lake St.
Middleton, MA 01940

Chief Robert W. Pratt
Reading Fire Department
267 Woburn St.
[illegible]ding, MA 01867

Police Chief William R. Connors
Town of Wakefield Ambulance Serv.
Wakefield Police Department
1 Union St.
Wakefield, MA 01880

Chief William J. Carlin
Swampscott Police Dept.
36 Burrell St.
Swampscott, MA 01907

Mr. Warren R. French
Director of Fire Services
1 Monument Park
Arlington, MA 02174

Mr. Chester J. Eskholme
Professional Ambulance & Oxygen
Service, Inc., P.O. Box 326
111 Charles St.
[illegible]bridge, MA 02141

Mr. Arthur W. Enos
Enos Ambulance Service
24 Washington Ave. E.
Burlington, MA 01803

Chief E. Worthley
Floucester Police Department
197 Main St.
Gloucester, MA 01930

Mr. Stanley Lesky
Morgan's Professional Ambulance
Service, In.
101 North Common
Lynn, MA 01902

Chief Donald E. Burgess
Town of Manchester
12 School St.
Manchester, MA 01944

Chief Bradbury
Nahant Police Department
198 Nahant Road
Nahant, MA 01908

Chief Louis F. Anderson
Town of Rockport Police Dept.
Broadway
Rockport, MA 01966

Chief Albert E. Noble
Fire Department Rescue Squad
8 School Street
Gloucester, MA 01930

Mr. William F. Armstrong
Armstrong Ambulance Service
1241 Mass Ave.
Arlington, MA 02174

Chief John F. Carroll
Director of Police Services
7 Central St.
Arlington, MA 02174

Fire Chief Malcolm S. Macgregor
Action Fire Dept.
256 Central St.
Acton, MA 01720

Chief William Cremins
Cambridge Fire Dept.
491 Boradway
Cambridge, MA 02138

Chief Robert W. Poole
Hamilton Police Department
265 Bay Road
South Hamilton, MA 01982

Chief Joseph F. Scanlon, Jr.
Lynn Fire Department
725 Western Ave.
Lynn, MA 01905

Chief George E. Girard
Marblehead Police Department
Geary St.
Marblehead, MA 01945

Chief Nelson C. Harris
North Reading Fire Dept.
150 Park St.
North Reading, MA 01884

Chief Charles Connelly
Salem Police Department
17 Central St.
Salem, MA 01970

Chief Paul Romano
Lynnfield Police Dept.
55 Summer St.
Lynnfield, MA 01940

Mr. Robert C. Blomquist
Director of Community Safety
Town of Arlington
Arlington, MA 02174

Chief Robert Palmeri
Bedfird Fire Department
55 Great Road
Bedford, MA 01730

Chief Herbert W. Crawford
Burlington Fire Department
21 Center St.
Burlington, MA 01803

Chief Richard Ryan
Concord Fire Department
209 Walden St.
Concord, MA 01742

Mr. Peter E. Warren, Director
Town of Harvard Ambulance Service
Bromfield Street
Harvard, MA 01451

Chief John D. Bergeron
Lexington Fire Department
45 Bedford Street
Lexington, MA 02173

Mr. Russell Kulp
Boston Health & Hospitals
Emergency Medical Services
818 Harrison Avenue
Boston, MA 02118

Ms. Bethany Baker
Project Place Emergency Ser.
32 Rutland Street
Boston, MA 02188

Mr. Richard L. Bedigan
General Ambulance Ser. Inc.
253 Webster Street
Needham, MA 02194

Mr. Howard Rosenberg, Manager
Stavis Ambulance Service
322 Washington Street
Brookline, MA 02146

Mr. James Sweeney
Boston Ambulance Squad, Inc.
19 Dickens Street
Dorchester, MA 02122

Mr. Paul W. Reardon, President
Reardon Ambulance Service
53 Mallet Street
Dorchester, MA 02124

Acting Chief Arnold Eydenberg
City of Revere Fire Department
Ambulance Service, 400
Broadway, Revere, MA 02141

Mr. Ernest C. Caggiano, Pres.
Caggiano Ambulance Ser. Inc.
147 Winthrop Street
Winthrop, MA 02152

Mr. Lester A. Goldberg
Corcoran Ambulance
240 Bedford Street
Lexington, MA 02173

Chief James Ogilvie
Littleton Fire Department
Foster Street
Littleton, MA 01460

Chief Dominic J. Arena
Town of Lincoln Police Dept.
Lincoln Road
Lincoln, MA 01774

Mr. Robert L. Rayne
Emergency Medical Sales &
Service, Inc. P.O. Box 553
Waltham, MA 02154

Detective Richard Scanlon
Waltham Police Department
155 Lexington St.
Waltham, MA 02154

Chief Arthur Boudreau
Wilimington Fire Department
Church St.
Wilmington, MA 01887

Mr. Ralph Garvey, Director
Civil Defense Department
Town of Woburn, 10 Common St.
Woburn, MA 01801

Chief Jeremiah Kiley
Town of Belmont Police Dept.
455 Concord Avenue
Belmont, MA 02178

Chief W. Irving Taylor
Ashburnham Fire Department
3 Central St.
Ashburnham, MA 01430

Mr. Thomas J. Walker
Civil Defense Ambulance Serv.
Wheeler Road
Ashby, MA 01431

Chief Robert F. Johnson
Auburn Police Department
434 Southbridge St.
Auburn, MA 01501

Ms. Alva Cole, President
Ayer Volunteer Fire Departmer
14 Washington St.
Ayer, MA 01432

Police Chief Michael J. Ryde
Town of Barre Ambulance Serv.
Mechanic Street
Barre, MA 01005

Chief Richard F. Ranieri
Bellingham Fire Department
Ambulance Service, Box 65
Bellingham, MA 02019

Mr. Howard H. Spaulding
Berlin Emergency Rescue Squa
West Street
Berlin, MA 01503

Mr. Milton O. Baker
Bolton Ambulance
Main St.
Boston, MA 01740

Chief Stuart Perry
Brimfield Volunteer Fire Dep
Ambulance Service
Brimfield, MA 01010

Captain Susan Davis
Brookfield Emergency Rescue Sqd.
[illegible]ntral Street
Brookfield, MA 01506

Chief Edward Therrien
Douglas Fire Department
Cottage St.
Douglas, MA 01516

Mr. Joseph W. Bramante, Pres.
Montachusett Ambulance Serv.
219 Main St.
Fitchburg, MA 01420

Captain Marguerite A. Crevier
Hardwick Rescue & Emergency
Squad, Inc. Ruggles Hill Rd.
Hardwick, MA 01037

Chief Frederick W. Johnson
Leominster Fire Department
19 Church St.
Leominster, MA 01453

Mr. Louis J. Danello
Milford Ambulance Service
28 Hayward St.
Milford, MA 01757

Chief Norman Drolet
Oakham Police Department
Ware Corner Road
Oakham, MA 01068

Mr. Ernest Wessell, REMTA
Oxford Ambulance Service
Charlton St.
Oxford, MA 01540

Mr. Richard Carney, Town Mgr.
Town of Shrewsbury Ambulance
Service, 100 Maple St.
Shrewsbury, MA 01545

[illegible] Bruce S. Baker
Sterling Firefighters Ambulance
Service, Inc., 1 Main St.
Sterling, MA 01564

Mr. Philip R. Divoll, President
Charlton Ambulance Service, Inc.
Power Station Road
Charlton, MA 01508

Chief Ronald R. Provost
Sturbridge Ambulance Service
P.O. Box 206
Fiskdale, MA 01518

Chief Paul H. Beaudette
Franklin Fire Department
West Central Street
Franklin, MA 02038

Chief Henry J. McNamara, Jr.
Grafton Police Department
26 Providence Road
Grafton, MA 01519

Chief James P. Deming
Lunenburg Fire Department
7 School ST.
Lunenburg, MA 01462

Chief Roy A. LeGrand
Monson Fire Department
201 Main St.
Monson, MA 01057

Chief Cornelius J. Madigan
Northbridge Fire Department
Ambulance Service-Main St.
Whitinsville, MA 01588

Chief Leo J. LaPointe
Petersham Police Department
EastSt.
Petersham, MA 01366

Chief Alva Gregoire
Southbridge Fire Department
Ambulance, 24 Elm St.
Southbridge, MA 01550

Chief Richard Paine
Templeton Fire Department
South Main St.
Baldwinville, MA 01436

Chief William Parsons
East Brookfield Fire Dept.
Main St.
East Brookfield, MA 01515

Chief Norman M. Fletchner
Fitchburg Fire Department
28 Oliver St.
Fitchburg, MA 01420

Ms. Alma L. Wood, Pres.
Wood's Ambulance Service
65 Montvale Road
Gardner, MA 01440

Chief John J. Woods, Jr.
Leicester Police Dept.
1078 Main St.
Leicester, MA 01524

Mr. Daniel J. Ruggerio
Ruggerio Bros. Amb. Serv.
72 Water St.
Milford, MA 01757

Mr. David Nydan, President
North Brookfield Emer. Squad
P.O. Box 102
North Brookfield, MA 01535

Chief Edward O'Lari
Orange Fire Department
18 Water St.
Orange, MA 01364

Chief Leo S. Hurme
Princeton Firefighters
Emergency Medical Services
Route 140
East Princeton, MA 01517

Captain Donald C. LeDoux
Spencer Rescue & Emergency
Squad, Inc., P.O. Box 147
Spencer, MA 01562

Mr. John Pelletier, President
Townsend Police Ambulance
Association, c/o Townsend
Police Dept., 272 Main St.
Townsend, MA 01469

Chief Henry J. Poirier, Jr.
Upton Fire Department
Church St.
Upton, MA 01568

Chief John J. Emerick
Town of Uxbridge
South Main St.
Uxbridge, MA 01569

Chief Robert F. Hevey
Ware Ambulance Service
East Main St.
Ware, MA 01082

Chief John J. Soja
Warren Fire Dept. Ambulance
Main St.
Warren, MA 01083

Ms. Linda Bogdanowics, V.P.
Webster Rescue & Ambulance
Thompson Road
Webster, MA 01570

Chief Albert J. Rotti, Jr.
West Boylston Fire Dept.
Operations Center-Worcester S
West Boylston, MA 01583

Mr. Janes Thurber
West Brookfield Rescue Squad
Cottage St.
West Brookfield, MA 01585

Chief Salvino Marinelli
Winchendon Ambulance Service
Front St.
Winchendon, MA 01475

Mr. Thomas E. Kane
Kane Ambulance Service
270 Park Ave.
Worcester, MA 010609

Mr. Robert Himmer
Worcester-Himmer Ambulance Serv.
51 Shrewsbury St.
Holden, MA 01520

Chief Anson D. Saball
Shirley Police Department
Lancaster Rd.
Shirley, MA 01464

Chief Harlan Hansen
Granville Fire Dept. Ambulanc
Route 157
Granville, MA 01034

Mr. Michael T. Bliven, Pres.
Huntington Lions Club Amb. Serv.
East Main St.
Huntington, MA 01050

Chief Melbert Johnson
Southwick Fire Dept.
11 Depot St.
Southwick, MA 01077

Chief Gerald J. Fouche
Westfield Fire Dept.
34 Broad St.
Westfield, MA 01085

Chief Ernest M. Gay
Belchertown Police Dept.
10 Cottage St.
Belchertown, MA 01007

Chief David J. Seiffert
Granby Fire Department
State Street
Granby, MA 01033

Mr. Kenneth J. McKenna
Town of South Hadley Ambulanc
144 Newton St.
South Hadley, MA 01075

Fire Chief Harry W. Schneider
Town of Agawam Ambulance Serv.
Fire Headquarters, Springfield St
Agawam, MA 01001

Chief Donald H. Abraham
Longmeadow Police Dept.
34 Williams St.
Longmeadow, MA 01106

Fire Chief H. R. DuBois
Town of Ludlow Ambulance Ser
612 Chapin St.
Ludlow, MA 01056

Chief Raymond J. Boudet
Springfield Fire Dept.
1535 Roosevelt Ave.
Springfield, MA 01109

Chief Thomas McNamara
West Springfield Police Dept.
26 Central St.
West Springfield, MA 01089

Chief Robert W. Macaulay
Wilbraham Fire Department
2770 Boston Road
Wilbraham, MA 01095

William E. Jones, Ph.D.
Superintendent, Belchertown
State School, State Street
Belchertosn, MA 01007

Mr. Glenn A. Russo, President
Lenox Volunteer Ambulance Squad
6 Walker St.
Lenoxdale, MA 01240

Captain Joseph C. Babineau
Chicopee Fire Dept Ambulance
Service, Cabot Street
Chicopee, MA 01013

Mr. James Mac C. Smith, Pres.
Adams Ambulance Service
2 Pleasant St.
Adams, MA 01220

Mr. Everett H. Miller
Hopkins Ambulance Service
66 Spring St.
Williamstown, MA 01267

Mr. Michael R. Wheeler
Berkshire Ambulance Serv.
P.O. Box 1292
Pittsfield, MA 01201

Mr. Wayne Kierstead
Dalton Firemens' Association
20 Flansburg Avenue
Dalton, MA 01226

Mr. Paul W. Fuller
Hinsdale Volunteer Firemens'
Association
Hinsdale, MA 01235

Harold Stein, M.D.
General Electric Medical Center
100 Woodlawn Avenue
Pittsfield, MA 01201

Chief Winslow Newton
Lanesboro Volunteer Firemens'
Association, South Main St.
Lanesboro, MA 01237

Mr. Kenneth Labier
Lee Volunteer Ambulance Service
R[illegible]road Street
Lee, MA 01238

Chief Anthony Piers
Pittsfield Police Department
39 Allen Street
Pittsfield, MA 01201

Chief Francis Malnati
Richmond Fire Department
Ambulance Service, State Rd.
Richmond, MA 01254

Fire Chief George Bartin
Otis Rescue Squad, Inc.
Star Route 61
Otis, MA 01253

Chief Ludwik Tluszcz
Sandisfield Fire Department
Route 8
Sandisfield, MA 01255

Mr. Walter F. Atwood, III, Pres.
Southern Berkshire Volunteer
Ambulance, P.O. Box 576
Great Barrington, MA 01230

Mr. Nathaniel Smith
Ashfield Ambulance Service
Main Street
Ashfield, MA 01330

Chief Lester Magnant
Charlemont Fire Department
Main Street
Charlemont, MA 01339

Mrs. Jean Girard
Colrain Volunteer Firemens'
Association, Inc.
Main Street, Colrain, MA 01340

Chief Ray Boyden
Conway Fire Department
Conway,
Massachusetts 01341

Chief Clayton D. Cromack
Greenfield Fire Department
412 Main Street
Greenfield, MA 01301

Mr. David Quinn, Sr.
Kidder Funeral Home & Company,
Inc., 1 Parker Avenue
Northfield, MA 01360

Mr. Philip E. Ethier
Mercy Ambulance Service, Inc.
3 Shattuck Street
Greenfield, MA 01301

Chief William F. Crofton
Town of Shelburne Falls
Fire Department, 9 Williams St.
Shelburne Falls, MA 01370

Mr. Raymond Bradley
South Deerfield Emergency
Rescue
54 Sugarloaf Street
South Deerfield, MA 01342

Mr. Brett Foley, Chairman
Amherst Emergency Med. Ser.
Committee, c/o Town of Amherst
Town Hall, Amherst, MA 01002

Mr. Bernard Forgea, Clerk
Cummington Fire Association, Inc
Route 9
Cummington, MA 01026

Chief William J. McCaulley
Easthampton Fire Department
84 Union Street
Easthampton, MA 01027

Chief Francis Dresser
Goshen Fire Department
Main St.
Goshen, MA 01032

Chief Richard S. Hannum
Whately Fire Department
Christian Land
Whately, MA 01093

Fire Chief John H. Reid
Town of Avon Ambulance Service
Goeres Square
Avon, MA 02322

Mr. Louis Earl Melanson
Melanson Limousine Service., Inc.
58 Rindone St.
Holbrook, MA 02343

D. Joseph Griffin
Director of Public Safety
Northeastern University
104 Forsyth St.
Boston, MA 02115

Mr. Henry R. Soutiere, Pres.
Forest Park/Gold Cross Eastern
Ambulance Serf., 1186 State St.
Springfield, MA 01109

Chief Wendell J. McNamara
Wrentham Fire Dept.
South St.
Wrentham, MA 02093

Mr. Raymond LeBlanc
Nashoba Valley Ambulance Serv.
35 Cook St.
Boylston, MA 01505

Mr. Robert A. Hinton
Emergency Medical Services
Taunton Police Dept.
16 Court St.
Taunton, MA 02780

Mr. Stephen Haskell, Chiarman
Rehoboth Ambulance Committee
Anawan Street
Rehoboth, MA 02769

Chief Rheal Labrie
Southampton Fire Dept.
College Highway
Southampton, MA 01073

Mr. Brian Rust
Medi Van
32 Damon Road
Northampton, MA 01060

Chief Howard L. Waterman
Halifax Police Department
Halifax, MA 02338

Ms. Marion J. Brewster
Brewster Ambulance Service
20 Brookley Road
Jamaica Plain, MA 02130

Chief William Burke
MBTA Police
45 High St.
Boston, MA 02110

Chief William J. Giallonardo
Medway Police Dept. Emergency
Medical Services, 161 Village
Medway, MA 02053

Mr. Mark Foster
Beverly Civil Defense Emergency
Service, 16 Crescent Ave.
Beverly, MA 01915

Mr. David Gilson
Groton Volunteer Ambulance Serv.
Main St.
Groton, MA 01450

Mr. David Drowne
Rahoboth Rescue
Anawan St.
Rehoboth, MA 02769

Commissioner George Paul
Boston Fire Department
115 Southampton St.
Boston, MA 02118

Chief Ralph Pomeroy, Sr.
Sunderland Fire Department
North Main St.
Sunderland, MA 01375

Chief James McCoy
General Dynamics Corp.
97 East Howard St.
Quincy, MA 02169

Chief Edwin Gibson
West Bridgewater Fire Dept.
West Center Street
West Bridgewater, MA 02379

Chief James Olivieri
M.I.T. Campus Police
120 Mass. Ave.
Cambridge, MA 02139

Ms. Mary Jennings
Salem Red Cross
314 Essex St.
Salem, MA 01970

Fire Chief Josiah F. Frost
Sudbury Fire Department
Old Sudbury Road
Sudbury, MA 01776

Mr. James Sullivan
Handi Van
150 Warren St.
Lowell, MA 01852

Mr. Harold Waterhouse, Chai
American National Red Cross
Disaster Service
Lowell, MA 01852

Chief Robert C. O'Reilly
Watertown Fire Department
99 Main St.
Watertown, MA 02172

Sergeant Donald Medeiros
Town of Dartmouth P.D.
Russells Mills Road
South Dartmouth, MA 02748

Police Chief Patrick H. Ryder
L[illegible]aster Police Department
[illegible]ulance, Main Street
Lancaster, MA 01523

Chief Francis B. O'Brien
Melrose Fire Department Rescue
Ambulance, 576 Main St.
Melrose, MA 02176

Mr. Everett Cooke
Roy's Cabulance Service
741 Tyler St.
Pittsfield, MA 01201

Chief Robert W. McElhinney
Winchester Fire Dept. Rescue
32 Mt.Vernon St.
Winchester, MA 01890

~~THEM, Incorporated~~
~~141 Milk St.~~
~~Suite 1101~~
~~[illegible]on, MA 02109~~

Mr. Charles Rainville
New Bedford Emergency Med. Serv.
1204 Purchase St.
New Bedford, MA 02740

Mr. John T. Driscoll
Chairman, Mass Turnpike Authority
Sutie 3000, Prudential Center
Boston, MA

Mr. William Covalucci
Trans. Management Corp.
88 Hicks Avenue
Medford, MA 02155

Mr. Benjamin Cram
Tir-City Medi- Van
33 Brichcroft Road
Leominster, MA 01453

Mr. Robert Chipman
Chipman Chair Transportation
41 Mullin Ave.
West Quincy, MA 02169

Dr. Harry Dickson
General Electric River Works
Medical Center - 1100 West. Ave.
Lynn, MA 01910

Mr. Chris Lucas
Woburn Council of Social Concern
P.O. Box 55
Woburn, MA 01801

Mr. Thomas Holmberg
Handy-Cabs of Mass. Bay, Inc.
P.O. Box 65
Waverly, MA 02179

Raymond D. Adams, M.D., Director
Shriver Center for Mental
Retardation
200 Trapelo Road
Waltham, MA 02154

Mr. Leonard F. Therrien
Alert Ambulance Service
39 New Boston Road
Fairhaven, MA 02719

Commissioner Denis M. Condon
Mass. Dept. of Public Safety
1010 Commonwealth Ave.
Boston, MA 02215

Mr. James O. Ward
Cape Cod Ambulance
P.O. Box 58
South Yarmouth, MA 02664

Chief C. Robert Mitchell
Easton Fire Dept.
Lothrop St.
Easton, MA 02334

Mr. Raymond A. Goudreau
Medic-Bus Service, Inc.
154 Moody St.
Lowell, MA 01854

Ms. Barbara Griffith, Exec. Dir.
Amherst Council on Agins,
Sr. Center, 17 Kellog Ave.
Amherst, MA 01002

Mr. Alfred LeBlanc
Berkshire Rehabilitation
Center, Inc. 741 North St.
Pittsfield, MA 01201

Mr. Robert S. Zapustas
Wheelchair Transit, Inc.
30 Crescent Ave.
Stoughton, MA 02072

Chief Edward F. Barry
Quincy Fire Department
40 Quincy Ave.
Quincy, MA 02169

Mr. Walter Kennedy
Milton Red Cross
92 Highland Ave.
Milton, MA 02186

Chief Earl Ford
Town of Pembroke Fire Dept.
Ambulance, 172 Center St.
Pembroke, MA 02359

Captain James L. Killoran
Commonwealth of Mass. State
Police, Norwood Municipal
Airport, Norwood, MA 020

Mr. William E. Murphy
Brookline Fire Dept.
338 Washington St.
Brookline, MA 02146

Ms. Caroline Reed
Cape Cod Hospital
Hyannis, MA 02601

Ms. Charlotte Dantowitz
Peabody Council on Aging
96 Main St.
Peabody, MA 01960

Mr. Kevin Tully
Malden Emergency Center, Inc.
22 Mountain Ave.
Malden, MA 02148

Mr. Richard E. Baum, Director
Pepperelle Ambulance Service
P.O. Box 396
Pepperell, MA 02463

Mr. Gary F. MacKenzie
Belmont Cab Service, Inc.
61 White St.
Belmont, MA 02178

Mr. Roland G. Bileau
Fall River Chair Car Serv.
1680 North Main St.
Fall River, MA 02720

Mr. Joseph Doolin
Federated Dorchester Neighborhd.
House, 222 Bowdoin St.
Dorchester, MA 02122

Mr. Ernest W. Ktichen
Mass. Bay Para/Medical Ambulance
P.O. Box 45
Bedford, MA 01730

Mr. Robert B. LaFleur
Medical Transport
Twelfth St.
Leominster, MA 01453

Mr. Robert Zammito
Norfolk-Bristol Amb. Serv.
P.O. Box 435
Norwood, MA 02062

Captain Paul H. Scott
Boylston Fire Dept.
Main St
Boylston, MA 01505

Mr. Homer A. Gelineau
Cape Cod Medi-Coach
4 Whittier St.
East Falmouth, MA 02536

Mr. Paul F. Bolduc
Central Amb., Service, Inc.
P.O. Box 326
111 Charles St.
Cambridge, MA 02141

Mr. Henry Bennett
Town Chair Car
12 Hampshire St.
Lawrence, MA 01840

Mr. John J. Grady, Jr.
Emergency Medical Service
16 Crescent St.
Stow, MA 01775

Mr. Lawrence J. Harman
Call-A-Ride of Barnstable
County, Inc.
P.O. Box 770
South Dennis, MA 02660

Mr. Frederick M. O'Regan
Elder Van, Inc.
15 Pearl St.
Cambridge, MA 02141

Mr. John McCarthy
Springfield Dial-A-Van
45 East Court Street
Springfield, MA 01103

Mr. Walter F. Unda
Unda's Bus Service, Inc.
1139 Washington St.
Stoughton, MA 02072

Chief Wendell D. Blanchard
Hanover Fire Dept.
32 Center St.
Hanover, MA 02339

Chief Willard Newton
Phillipston Fire Dept.
State Rd.
Phillipston, MA 01331

Chief George F. Whalen
Maynard Fire Dept.
1 Summer St.
Maynard, MA 01754

Mr. Leo P. Birmingham
Birmingham Bus Service
168 Congress St.
Milford, MA 01757

Mr. Leonard Carroll, Flight
Operations Manager
Wiggins Airways (Norwood Air
Access Road
Norwood, MA 02062

Mr. Morris Bartfield
Bay State Taxi, Inc.
156 Lawton St.
Brookline, MA 02146

Mr. Benjamin Baker, Adminis.
Bristol County Home Care for
Elderly, Inc.
178 Pine St.
Fall River, MA 02720

Dr. Haessler, Chief Physician
Paul A. Dever Asso. for
Retarded Citizens
1380 Bay (off Rt. 138)
Taunton, MA 02780

Mr. William Rheaume
Mass. Rehab. Commission
Div. of Client Serv.
296 Boylston St.
Boston, MA 02116

Mr. William T. Luddy
Baystate Bus Corp.
166 East Ashland St.
Brockton, MA 02401

Mr. Anthony H. Maciel
East Providence Amb., Inc.
156 Warren Ave.
East Providence, RI 02914

Mr. Gilbert Garnett
Bristol County Amb. Serv.
146 Tremont St.
Taunton, MA 02780

Chief Paul L. Doherty
Commonwealth of Mass
Capitol Police
122 State House
Boston, MA 02133

Mr. Patrick J. Lapan
Suburban Amb. Serv.
5 Stanford Circle
Milford, MA 01757

hief John Gaspie, Jr.
antucket Fire Dept.
ou[illegible] Water St.
an[illegible]ket, MA 02554

hief Edward B. Callahan
oburn Fire Dept.
54 Main St.
oburn, MA 01801

r. Mangini, Director
ity of Waltham Civil Defense
7 Lexington St.
altham, MA 02154

s. Holly Kooris
ouncil on Aging
own Hall, Main St.
atertown, MA 02172

r. Peter Smith
LINKS Project, Franklin County
Planning Dept.
425 Main ST.
Gr[illegible]field, MA 01301

Ronald Rosen, Ed.D., Superin.
Monson State Hospital
Drawer F
Palmer, MA 02069

Mr. Donald A. Robinson, Director
Dept. of Environmental Health &
Safety, Univ. f Mass. at Amherst
N414 Morrill Science Center
Amherst, MA 01103

Mr Thomas Mannion, President
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60 North Franklin St.
Lynn, MA 01904

Mr. James Hilly
Southwest Boston Senior Services
4258 Washington St.
Roslindale, MA 02131

M[illegible] Willard Newton, Pres.
Newton's Emerg. Med. Trans, Co
148 Marble St.
Athol, MA 01331

Chief Peter Huska
Hanson Fire Dept.
Main St. Fire Station
Hanson, MA 02341

Chief John Cristina
Dudley Fire Dept.
P.O. Box 46, W. Main St.
Dudley, MA 01570

Chief Benjamin Livesey
Attleboro Fire Dept.
100 Union St.
Attleboro, MA 02703

Mr. John N. Farrar
Edgartown Volunteer Amb. Assoc,
Church St.
Edgartown, MA 02539

Mr. Alan Grota
Metropolitan Amb. Service
47 Falmouth St.
Attleboro, MA 02703

Mr. Arthur R. Joia
Wheelchair Service
35 Patterson St.
East Weymouth, MA 02189

Chief Edward B. Riley, Jr.
Newton Fire Dept.
1160 Centre St.
Newton, MA 02159

Ms. Suzanne Bailey
Bailey's Medi Coach
33 Birchcroft Rd.
Leominster, MA 01453

Chief George W. Manter
tri-Town Ambulance
Menemsha Crossroad
Chilmark, MA 02535

Ms. Janice Bigwood
Cape Cod Wheelchair Transit
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P.O. Box 1003
Sandwich, MA 02563

Mr. David K. Guiney
Worcester Reg. Trans. Authorit
32 Franklin St.
Worcester, MA 01608

Chief Walter Stewart
Scituate Fire Dept.
144 First Parrish Road
Scituate, MA 02066

Chief Francis A. Luttazi
Town of Dover Fire Dept.
1 Walpole St.
Dover, MA 02030

Mr. Stanley Portman
Action Ambulance Serv.
185 Essex St.
Melrose, MA 02176

Chief Clarence A. Levy
Bridgewater Fire Dept.
School St.
Bridgewater, MA 02324

Mr. William Pike
Garden City Bus Service, Inc.
755 Boylston St.
Boston, MA 02116

Mr. William J. Goggins, Jr.
Acting Superin., Northampton
State Hosp.
Prince & West Streets
Northampton, MA 01060

Mr. Richard F. Moynihan,
Acting Superin, Wrentham Sta
School
P.O. Box 144
Wrentham, MA 02093

Chief Ralph Tanzi
Rockland Fire Dept.
Union St.
Rockland, MA 02370

Mr. Verlon Curtis
Curtis Ambulance Ser., Inc.
16 John Street
Reading, MA 01867

George E. Casaubon, M.D.
South Central Mass. Elderbus
100 South Street
Southbridge, MA 01550

Mr. John Hunter
Barnstable County Public Transportation Program, c/o Garfield
and Sergeant, Box 1, 34 School
Street- West Dennis, MA 02657

Mr. Thorn Mean
Rockingham Regional Ambulance
Service, 227 Main Street
Nashua, New Hampshire

Ms. Carol Ramsey
Palmer Senior Citizens Club, Inc.
29 Central Street
Palmer, MA 01069

Mr. Warren Furey
West Medford Community Center
69 Boston Street
West Medford, MA 02155

Mr. David Cohen
Greater Lynn Senior Services
25 Exchange Street
Lynn, Massachusetts

Mr. David McCusker, Director
Malden Action
176 Pear Street
Malden, MA 02148

Mr. Ralph Wener
Jewish Nursing Home of Western
Massachusetts, 770 Converse St.
Springfield, MA 01106

Ms. Carol E. Lashnits
Elder Services of Cape Cod and
the Islands, Inc., 4 Church St.
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02568

Mr. John F. Green, Exec. Dir.
Council of Elders, Inc.
186 Massachusetts Avenue
Boston, MA 02115

Mr. Paul A. McOwen, Jr.
Mt. Grace Regional Transportation Corporation, 545 Main St.
Athol, MA 01331

Mr. Nicholas Phelps
Pioneer Valley Transfer
180 Federal Street
Greenfield, MA 01301

Chief John F. Greene
Blackstone Fire Department
15 St. Paul Street
Blackstone, MA 01504

Ms. Beverly Shapiro
Wheels on Wheels
25 Nevada Avenue
Malden, MA 02148

Mr. Leonard Therrien
Alert Ambulance Service, Inc.
39 New Boston Road
Fairhaven, MA 02719

Deputy Fire Chief Robert Koning
Carlisle Fire Department
Lowell Road
Carlisle, MA 01741

Mr. Robert D. Cataldo
Somerville Ambulance Service
6 Kensington Avenue
Somerville, MA 02145

Mr. Geoffrey H. Sprague, Mgr.
North Adams Ambulance Ser. Inc.
P.O. Box 1081
North Adams, MA 01247

Mr. Dennis Popp
Ambulette, Incorporated
80 Roy Street
Swampscott, MA 01907

Mr. Paul J. McCormick
P & M Transportation Company
46 Wildwood Avenue
Braintree, MA 02184

Chief Paul H. Hoag
Windsor Fire Department
Ambulance Service, Route 9
Windsor, MA 01270

Mr. Donald Yacovone
Don's Chair Car Service
77 Smith Street
North A

Chief Robert Shannon
Hull Police Dept.
253 Atlantic Ave.
Hull, MA 02045

Mr. Daniel F. Brosnan, Jr.
Town of Arlington - Rec.
Div.
422 Summer St.
Arlington, MA 02174

Mr. Edward P. Stefanik, Dea
of Administration, Springfi
Technical Community Colle
One Armory Square
Springfield, MA 01105

Ms. Jo Anne Berthiaume
Ray's Chair Car Serv. Inc.
7 Broad St.
Springfield, MA 01103

Mr. Frederick Mues, Admin.
Geriatric Authority of Holyo
45 Lower Westfield Road
Holyoke, MA 01040

Mr. Joseph J. Grieco
Grieco Wheelchair Serv.
536 Pond Street
Braintree, MA 02184

Mr. Robert E. Lamoureaux
Twin City Ambulance
48 Walnut St.
Fitchburg, MA 01420

Mr. Howard Blum
Rutland F. D. Ambulance Serv
240 Main St.
Rutland, MA 01543

Mr. Andrew W. Putnam, Pres.
Med. Serv. of Cape Cod, Inc.
P.O. Box 1577
Buzzards Bay, MA 02532

Mr. James R. Landry
Charter Ambulance Service
144 Meadow Street
[illegible]tfield, MA 01085

Mr. Harry L. Bloom
H & L Bloom, Inc.
427 Cohannet Street
Taunton, MA 02780

Mr. Richard H. Satherland
Satherland School Bux
63 Gay Street
Quincy, MA 02169

Mr. Dean W. Charron
Western Mass. Ambulance Ser.
Incorporated, 602 Main St.
Holyoke, MA 01040

[illegible] Maurice Ryan & Mr. David
Walton, Patriot Ambulance
Bradford Street
Concord, MA 01742

Ms. Sally Tewksbury
Waltham Council on Aging
610 Main Street
Waltham, MA 02154

Ms. Jo Ann Berthiaume
Para-Medic Ambulance Ser. Inc.
P.O. Box 553
Springfield, MA 01101

Mr. John F. Kelley, Jr.
JFK Transportation, Inc.
P.O. Box 701, 1 Bigelow Ave.
Natick, MA 01760

Mr. Timothy J. Churchill
[illegible]ir Care Corporation
[illegible]1 Charles Street
East Cambridge, MA 02141

Mr. James J. Lanciani, Jr.
Leominster Civil Defense
145 Lancaster Street
Leominster, MA 01453

Mr. Paul E. Carbrey, Manager
Revere Ambulance Service
425 American Legion Highway
Revere, MA 02151

Mr. Robert C. Sullivan
Sulli-Van, Servi-Car, Inc.
d/b/a W. Springfield Servi-Car
824 Berkshire Avenue
Springfield, MA 01051

Mr. Kevin M. Ripley
Wheelchair Transport
81 Taunton Street
Middleborough, MA 02346

Mr. Donald Balboni
South Shore Community Action
Council, Inc.
17 Court Street (Rear)
Plymouth, MA 02360

Mr. Mangini, Director
City of Waltham Civil Defense
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Mr. Donald A. Robinson, Dir.
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& Safety, Univ. of Mass. at
Amherst-N414 Morrill Science
Center-Amherst, MA 01103

Ms. Suzanne Bailey
Bailey's Medi Coach
33 Birchcroft Road
Leominster, MA 01453

Mr. Eric Dunphey
Worcester City Hospital
Ambulance Service, 26 Queen St.
Worcester, MA 01610

Mr. Robert D. Cataldo
Somerville Ambulance Service
6 Kensington Avenue
Somerville, MA 02145

Mr. Robert E. Lamoureaux
Twin City Ambulance
48 Walnut Street
Fitchburg, MA 01420

Mr. Ralph Wener
Jewish Nursing Home of
Western Massachusetts,
770 Converse Street
Springfield, MA 01106

Mr. Leonard Therrien
Alert Ambulance Service, Inc.
39 New Boston Road
Fairhaven, MA 02719

Chief Oscar Gassett
Halifax Fire Department
Plymouth St.
Halifax, MA 02338

Chief Warren H. Morse
Boxborough Fire Dept.
Massachusetts Ave.
Boxborough, MA 01719

Lt. Dominic A. Ferrazzi
Framingham Police Dept.
89 Union Ave.
Framingham, MA 01701

Fire Chief Walter N. Perron
Westborough Fire Dept.
42 Milk St.
Westborough, MA 01581

Chief Thomas J. Reidy
Wareham Fire Dist./Dept.
271 Main St.
Wareham, MA 02571

Chief Thomas F. Moore
Town of Clinton Ambulance Serv.
42 Church St.
Clinton, MA 01510

Ms. Jane Snyder
Medi-Mobile
31 Arlington Ave.
Revere, MA 02151

Chief Irving Fisher
Onset Fire Department
5 East Central Ave.
Onset, MA 02558

Mr. Erick Dunphey
Worcester City Hosp. Amb. Se
26 Queen Street
Worcester, MA 01610

MASSACHUSETTS CIVIL DEFENSE AGENCY
AND OFFICE OF EMERGENCY PREPAREDNESS
400 Worcester Road Framingham, Mass. 01701

LIST OF LICENSED HOSPITALS

AND

TABLE OF BEDS, CENSUS DAYS, AVERAGE CENSUS, AND OCCUPANCY RATE

FOR

MEDICAL SURGICAL AND MEDICAL SURGICAL ICU SERVICES

EXTRACTED FROM

OFFICE OF STATE HEALTH PLANNING

DIVISION OF HEALTH STATISTICS DATA

TOWN	NAME OF HOSPITAL	CLASSIFICATION/ADMINSITRATORS
AMESBURY	The Amesbury Hospital Morrill Place 01913 388-1474	General without maternity Robert Ponticelli, Adm.
AMHERST	University Health Services University of Mass. 01002 549-2671	College Infirmary Barry W. Averill, Director
ANDOVER	Isham Infirmary Phillips Academy 01801 475-3575	School Infirmary Francis G. Soule, M.D.- Medical Director
ARLINGTON	Symmes Hospital Summer Street 01274 646-1500	General without maternity G. Roger Martin, Adm.
ASHBURHAM	Naukeag Hospital Lake Road 01430 827-	Observation and Treatment of Mild Nervous Disorders Don Connors, Acting Director
ATHOL	Athol Memorial Hospital 2033 Main Street 01331 249-3511	General with out maternity Frederick W. Hillis, Adm.
ATTELBORO	Sturdy Memorial Hospital 211 Park Street 01432 222-5200	General with maternity Henry Veldman, Administrator
AYER	Nashoba Community Hospital 200 Groton Road 01432 772-0200	General without maternity Phillip S. Balasa, President
BELMONT	McLean Hospital 115 Mill Street 02178 855-2000	Mental Health Henry J. Langevin, Administr.
BEVERLY	Beverly Hospital, Inc. Herrick & Heather Sts. 01915 922-3000	General with Maternity Mr. Craig Slater, Director
BOSTON	Affiliated Hospitals Center, Inc. 641 Huntington Avenue 02115	General with Maternity
	Peter Bent Brigham Hospital(Division) 721 Huntington Avenue 02115 732-6000	General without maternity Vickery Stoughton, Director
	Robert Breck Brigham Hospital(Division) 125 Parker Hill Avenue 02120 732-5000	General without maternity Robert D. Emerman, Director
	Boston Hospital for Women (Division) Lying-In Unit, 02115 221 Longwood Ave -732-4000	General with maternity James T. Staton, Director
	Parkway Unit 245 Pond Avenue - 734-5300	Gyn&Surgical Mrs. Barbara Nye, Administ.

BOSTON(cont'd)	Beth Israel Hospital 330 Brookline Avenue 02215 735-2000	General with maternity Mitchell T. Rabkin, M.D,. Direc
	Boston University Infirmary 881 Commonwealth Avenue 02215 353-3573	College Infirmary Samuel E. Leard, MD., Med. Direct
	Carney Hospital 2100 Dorchester Avenue 02215 296-4000	General without maternity Sister Margaret Tuley, Adminis.
	Children's Hospital Medical Ctr. 300 Longwood Avneue, 02115 734-6000	Pediatric/Special Adult Gen. David S. Weiner, Director
	Crittenton Hasting House 10 Perthshire Road, 02134 Brighton 782-7600	Institution for the Care of Unwed Mothers Carol C. Cleven, Director
	* Department of Health and Hospitals Boston City Hospital 818 Harrison Avenue 02118 424-5000	General with maternity David Rosenbloom, Ph.D. - Commiss
	The Mattapan Hospital 249 River Street 298-7900	Chronic Disease Meribah Stanton, Director
	Long Island Hospital Boston Harbor 328-1371	Chronic Disease Meribah Stanton, Director
	Faulkner Hospital Corp Center at Allendale St. 02130 Jamaica Plain - 522-5800	General without maternity Douglas L. Fairfax, Director
	Hahnamann Hospital 1515 Commonwealth Avenue 02135 245-1100	General without maternity Angelo L. Contieri, Administrator
	Hebrew Rehab. Center for Aged 1200 Center Street, Roslindale 02131 325-8000	Chronic Disease and Rehab. Instit Maurice J. May, Exec. Director
	Huntington General Hospital 222 S. Huntington Avenue 02130 522-4300	General without maternity William Thompson, Administrator
	Jewish Memorial Hospital 59 Townsend Street, Rox. 02119 442-8760	Chronic Disease and Assoc. Acute Care Stanley M. Fertel, Exec. Director
	Joseph P. Kennedy Jr. Memorial 30 Warren Street, Brighton 02135 254-3800	Pediatrics and Rehab. Sister Mary Ann. Loughlin,F.M. Executive Director
	Lahey Clinic Foundation, Inc. Brooks Hospital Unit 227 Summit Avenue 02146 734-8850	General with maternity Kenneth D. Bloem, Administrator

BOSTON (cont'd)	St. John of God Hospital 296 Allston Street, Brighton 02146 277-5750	Chronic Disease Robert J. Jepson, Jr., Exec.Dire
	St. Margaret's Hospital 92 Cushing Avenue, Dorchester 02125 436-8600	General with maternity Sister Mary Bernadette, Adm.
	University Health Services Northeastern University 360 Huntington Avenue 02115 247-5000	College Infirmary Job E. Fuchs, M.D., Director
	University Hospital Inc. 73 E. Newton Street, 02118 247-5000	General without maternity John G. Betjemann, Administrator
BRAINTREE	Braintree Hospital 250 Pond Street 02185 848-5353	Chronic Disease Ernest J. Broadbent, Administrato
	Norfolk County Hospital 2001 Washington Street South Braintree, 02185 843-0690	Chronic Disease John Barmack, Administrator
BROCKTON	Brockton Hospital 690 Centre Street 586-2600	General with maternity Wayne M. Henry, Administrator
	Cardinal Cushing General Hosp. 235 N. Peal Street 02401 588-4000	General without maternity Thomas F. Gentile, Administrator
BROOKLINE	Brookline Hospital 165 Chestnut Street 734-1330	General without maternity Raymond D. Sanzone, Director
	Pine Manor Junior College Health Ctr. 400 Health Street, Chestnut Hill 02167 - 731-7000	College Infirmary William P. Person, Vice Pres.
CAMBRIDGE	Cambridge Hospital 1493 Cambridge Street 02138 354-2020	General with maternity Leslie N.H. MacLeod, Director
	Otis Hospital, Inc. 85 Otis Street 02141 864-8300	Chronic Disease Lawrence J. Hesenius, Administrat
	Youville Rehab. and Chronic Disease Hospital, Inc. 1575 Cambridge Street, 02138 876-4344	Chronic Disease and Rehab. Sister Annette Caron, Adm.

BOSTON(cont'd)	Lahey Clinic Foundation (cont'd) Lahey Clinic Unit 605 Commonwealth Avenue 02115 262-4900	General without maternity Dr. Wise, President
	Longwood Hospital, Inc. 125 S.Huntington Avenue, 02130 566-1305	General without maternity Charles D. Merrill, Ph.D., Adm.
	Mass Eye and Ear Infirmary 243 Charles Street 02114 523-7900	Eye, Ear, Nose and Throat Charles T. Wood, Director
	Mass. General Hospital 32 Fruit Street 02114 726-2000	General without maternity Charles A. Sanders, M.D., Gen.Dir
	Vincent Memorial Hospital 32 Fruit Street 02114 726-2000	Gyn/Surgical Charles A. Sanders, M.D.Gen. Dir.
	Mass. Rehabilitation Hospital 125 Nashoba Street 02114 523-1818	Chronic Disease Manuel J. Lipson, M.D., Exec.Dir
	New England Baptist Hospital 91 Parker Hill Avenue, Rox. 02120 738-5818	General without maternity Raymond C. McAfoose, Act.Admin.
	New England Deaconess Hospital 185 Pilgrim Road, 02115 734-7000	General without maternity Richard Lee - Administrator
	New England Medical Center 171 Harrison Avenue 02111 956-5000	General without maternity with Communicable Disease and Rehabilitation Franklin Parker, Exec. Director
	Parker Hill Medical Center 53 Parker Hill Avenue, Rox. 02120 566-7080	General without maternity Art Bereraducci. Exec.Dir.
	Sidney Farber Cancer Center 44 Binney Street 02115 732-3000	Comprehensive Cancer Center Gerald S. Goldberg, Administrator
	Shriners Hospital for Crippled Children Burns Institute-Boston Unit 50 Blossom Street 02114 722-3000	Special Hospital for Burns Salvatore Russo, Ph.D. Admin.
	Simmons College Health Center 94 Pilgrim Road 02115 738-2251	College Infirmary Marjorie E. Readdy, M.D., Director of Health
	St. Elizabeth's Hospital, Inc. 736 Cambridge Street, Brighton 02135 782-7000	General with maternity and Neuropsychiatric William J. Sherry, Exec. Direct.

CAMBRIDGE(cont'd)	M.I.T. Infirmary 77 Mass. Avneue 40-60 Ames Street and 350 Memorial Drive 02139 253-5486	College Infirmary Dr. Melvin Rodman,Medical Dir
	Mount Auburn Hospital 330 Mount Auburn Street 02138 492-3500	General with maternity Walter P. Allen, Exec. Director
	Sancta Maria Hospital 799 Concord Avenue 02139 868-2200	General without maternity Sister Mary Mark, Administrator
	University Health Services Stillman Infirmary 75 Mount Auburn Street 02138 495-2010	College Infirmary Warren E.C. Wahcer, M.D. Director
CLINTON	Clinton Hospital 201 Highland Street 01210 365-4531	General without maternity Richard Mills. Administrator
CONCORD	Emerson Hospital Old Road 01742 369-1400	General with maternity and Psych. Thomas R. Crowdis,Jr., Adm.
DANVERS	Hunt Memorial Hospital Lindall Street 01923 774-4400	General with Maternity Richard R. Sherman, Administra
DEERFIELD	Deerfield Academy Infirmary Albany Road, 01342 (413) 772-0241	School Infirmary Thomas V. Urmy, M.D. Director
EVERETT	Whidden Memorial Hospital 103 Garland Street 02149 389-6270	General without maternity Rocco C. Mitticia, Exec.VicePres.
FALL RIVER	St. Anne's Hospital, Inc. 795 Middle Street 02721 674-5741	General with maternity James F. Lyons, Exec. Director
	Union Truesdale Hospital in Fall River	General with maternity
	Union Building 1820 Highland Avenue 674-8611	General with maternity Frederick C. Dreyer, Adm.
	Truesdale Building Highland Avenue, New Boston Road 02720 679-3131	General with maternity Frederick C. Dreyer, Administrato
FALMOUTH	Falmouth Hospital Ter Heun Drive 02450 548-5300	General with maternity Gerald F. Flynn, Administrator

FITCHBURG	Burbank Hospital, Inc. Nichols Road 01420 345-4311	General with maternity William J. Williams , Director
FRAMINGHAM	Cushing Hospital Dudley Road 01701 872-4301	Chronic Disease Joseph P. Kelly, Acting Director
	Bethany Hospital Bethany Road 01701 873-7793	Chronic Disease and Assoc Acute Care. Sister Barbara Macalouski, CSJ, Administrator
	Framingham Union Hospital 25 Evergreen Street 01701 873-3535	General with Maternity James W. Walckner, Administrator
GARDNER	Henry Heywood Memorial Hopsital 242 Green Street 01440 632-4320	General with maternity Paul E. Corcoran, Administrator
GLOUCESTER	Addison Gilbert Hospital 298 Washington Street 01930 283-4000	General with maternity Theodore A. Scharfenstein, Adm.
GREAT BARRINGTON	Fairview Hospital 29 Lewis Avenue, 01230 528-0790	General with maternity Guy Barg - Administrator
GREENFIELD	Franklin County Public Hospital 164 High Street 01301 772-0211	General with maternity Mr. Eugene Loubier, Exec. Directo
GROTON	Groton School Infirmary Farmer's Row 01450 448-6408	School Infirmary Richard Everett, III, Bus.Direct.
HANSON	Plymouth County Hospital High Street 02341 293-6322	Chronic Disease C. Clark Streeter, M.D. Superint
HAVERHILL	Hale Hospital 40 Buttonwoods Avenue 01830 372-7141	General with maternity Frederick Boss, Director
	Pentucket Manor Chronic Disease Hospital, Inc. 76 Summer Street 01830 372-8000	Chronic Disease Mrs. Jeannine King, Acting Direc.
HOLDEN	Holden District Hospital, Inc. Boyden Avenue 01520 829-6721	General without maternity Leonard F. Janes, Administrator
HOLYOKE	Holyoke Hospital 575 Beach Street 01040 536-5221	General without maternity Harold B. Pine, Administrator
	Providence Hospital Main Street, 01040 536-5111	General with maternity Owen F. Connolly, Administrator

HYANNIS	Cape Cod Hospital, Inc. 27 Park Street 03601 771-1800	General with maternity John F. Stockwell, President
ISPWICH	Benjamin Stickney Cable Memorial County Road 01938 356-4366	General without maternity J. Gerard Fournier, Administr[illegible]r
LAWRENCE	Lawrence General Hospital Garden and Prospects Sts, 01841 683-9471	General with maternity Alton W. Noyes, Executive Direc.
LEOMINSTER	Leominster Hospital Hospital Road, 01453 537-4811	General with maternity James C. Fannin, Jr. Administrato
LOWELL	Lowell General Hospital Varnum Avenue 01854 454-1271	General with maternity Roy C. Stephenson, Director
	Beaconcrest Chronic Hospital 500 Wentworth Avenue 01850 458-1271	Chronic Disease John C. Metcalf, Administrator
	St. John's Hospital 14 Bartlett Street 01852 458-1411	General without maternity James H. Frame, President
	St. Joseph's Hospital, Inc. 220 Pawtucket Street 01854 453-1761	General with maternity Mr. James Frame. President Administrator
LUDLOW	Ludlow Hospital Society 14 Chestnut Place 01056 583-8365	General without maternity Mr. Cecilio O. Maningas
LYNN	Lynn Hospital 212 Boston Street 01904 598-5100	General with maternity John A. Harrison, Director
	Mount Pleasant Hospital 80 Granite Street 01904 581-5600	Observation and Treatment of Mild Nervous Disorders A. Daniel Rubenstein, M.D. Adm.
	Union Hospital 500 Lynnfield Street 02143 598-8800	General without maternity Patrick F. Roach, Administrator
MALDEN	Malden Hospital Hospital Road 02148 322-7560	General with maternity Stanley Krygowski, Director
MARBLEHEAD	Mary A. Alley Hospital Widger Road 01947 631-1200	General without Maternity Anthony Caico, Administrator
MARLBOROUGH	Marlborough Hospital 57 Union Street 01752 485-1121	General without maternity Mathew Anderson - Director

MEDFORD	Lawrence Memorial Hopsital of Medford 170 Govenors Avenue 02155 396-9250	General without maternity Charles F. Johnson, Administrator
	Tufts University Health Center 124 Professors Row 776-4340	School Infirmary Philip B. Chase, M.D., Director
MELROSE	Melrose-Wakefield Hospital 585 Lebanon Street 02178 662-7200	General with maternity William L. Nellis, Gen. Director
METHUEN	Bon Secours Hospital, Inc. 70 East Street, 01844 687-0151	General with maternity and Psych. William L. Lane, Director
MIDDLEBORO	St. Luke's Hospital 52 Oak Street 02346 947-6000	General without maternity Mathew J. Ustas, Administrator
MILFORD	Milford-Whitinsville Regional Hospital	
	Milford Division 14 Prospect Street 01757 473-1190	General with maternity Thomas E. Cummings, Exec. Dire.
	Whitinsville Division 17 Granite Street 01588 234-6311	Chronic Disease Thomas E. Cummings, Exec. Direc.
MILTON	Milton Hospital 92 Highland Street 02186 696-4600	General without maternity Linwood W. Galcucia, Exec. Dire.
MOUNT HERMON	O'Connor Health Center Northfield Mt. Hermon School 498-5331	School Infirmary George S. Harris, Jr., M.D. -Dir.
MONTAGUE	Farren Memorial Hospital Main Street 01347 774-3111	General without Maternity Sister Francis Murphy, Adm.
NANTUCKET	Nantucket Cottage Hospital South Prospect Street 02554 228-1200	General with maternity Paul McNamara, Administrator
NATICK	Leonard Morse Hospital, Inc. Union Street 01760 653-3400	General with maternity David West, Exec. Director
NEEDHAM	Glover Memorial Hospital 148 Chestnut Street 02192 444-5600	General without maternity Stephen L. Barrett, Administrator
NEW BEDFORD	Frances P. Memorial Hospital 1074 Pleasant Street 02740 997-1211	Chronic Disease Robert R. Norris, Administrator
	St. Luke's Hospital 101 Page Street 997-1515	General with maternity Robert P. Simmons, Exec. Direc
	Union Hospital of New Bedford 4499 Acushet AVenue 02745 995-4611	General without maternity Leonard A. Langlois, Exec.Direc.

NEWBURYPORT	Newburyport Manor Chronic Hospital Hale and Low Street, 01950 462-7373	Chronic Disease Joseph F. O'Toole, Director
	Anna Jacques Hospital Highland Avenue 01950 462-6601	General with maternity Roger B. Labouteley, Adm.
NEWTON LOWER FALLS	Newton-Wellesley Hospital 2104 Washington Street 02162 964-2800	General with maternity William C. Christenson, Ex.Dir.
NORTH ADAMS	North Adams Hospital, Inc. Hospital Avenue, 02147 663-3701	General with maternity Robert D. Montogmery, Adminis.
NORTHAMPTON	Cooley Dickinson Hospital 30 Locust Street 584-4090	General with maternity William T. Lees, Jr. , Adm.
	Elizabeth Mason Infirmary Smith College 69 Paradise Road 01060 584-2700	College Infirmary Dr. Doris Sumerson, Administrator
	Hampshire County Chronic Disease Off River Road, Leeds 01035 584-8457	Chronic Disease Edwin C. Warner, Administrator
	McAlister Infirmary The Clarke School for the Deaf Round Hill Road 01060 584-3450	School Infirmary George T. Pratt President
NORWOOD	Norwood Hospital 800 Washington Street 02062 769-4000	General with maternity David P. Buckmueller, Adm.
OAK BLUFFS	Martha's Vineyard Hospital Linton Lane 02557 693-0410	General with maternity Robert L. Langlois, Administrator
PALMER	Wing Memorial Hospital Wright Street 01069 283-7651	General without maternity William Koughan, Administrator
PEABODY	J.B. Thomas Hospital 15 King Street 01960	General without maternity Edward C. O'Keefe, Administrator
PITTSFIELD	Berkshire Medical Center, Inc. Pittsfield General Unit 725 North Street 01201 499-4161	General with maternity Henry A. Moran, President
	Hill Crest Hospital, Inc. 165 Tor County Road 01201 443-4761	General without maternity Ralph J. Waite, Administrator

PLYMOUTH	Jordan Hospital Sandwich Road 02360 746-2000	General with Maternity Walter A. Strauch, Administrator
POCASSET	Barnstable County Hospital County Road 02559 563-5941	Chronic Disease Robert Millar, , Administrator
QUINCY	Quincy City Hospital 104 Whitwell Street 02169 773-6100	General with maternity Anthony P. DeFalco, Director
REVERE	Grover Manor Hospital 405 Washington Avenue 02151 284-7990	General without maternity,with Chronic Mrs. Dorothy N. Fletcher, R.N.Adm.
SALEM	Dr. J.R. Shaughnessy Chronic Disease & Rehabilitation Hospital Off Jefferson AVenue 01970 745-9000	Chronic Disease and Rehab. Joseph Alfanto, Administrator
	North Shore Children's Hospital 57 Highland Avenue 01970 745-2100	Pediatric and Adolecent George A. Demeritti, Administrator
	Salem Hospital 230 Highland Avenue 01970 744-6000	General with maternity Michael J. Geaney, General Direct.
SOMERVILLE	Central Hospital, Inc. 26-28 Central Street 02143 625-8900	General without maternity Sameul S. Perlman, Administrator
	Somerville Hospital, Inc. 230 Highland Avenue 02143 666-4400	General without maternity Normand E. Girard. President
SOUTH HADLEY	Pattie J. Groves Health Center Mt. Holyoke College 01075 (413)538-2121	College Infirmary Carol E. Craig, M.D, Administrator
SOUTHBRIDGE	Harrington Memorial Hospital 100 South Street 01550 765-9771	General with maternity Richard H. Sheffer, Administrator
SPRINGFIELD	Mercy Hospital 233-271 Carew Street, 01104 (413) 781-9100	General without maternity Sister M. Caritas, Administrator
	Shriner's Hospital for Crippled Children 516 Carew Street 01104 (413)781-6750	Pediatric Orthopedic Mrs. Madeline Murphy, R.N., Adm.
	Baystate Medical Center Springfield Hospital - Wesson Women's Unit 759 Chestnut Street, 01107 (413)787-3200	General with Maternity and Chr.Dis. Harry F. Gifford. Exec. Director
	Wesson Memorial Unit 140 High Street 01105 (413)787-2500	Harry F. Gifford. Exec. Director

SPRINGFIELD(cont'd)	Springfield Municipal Hospital 1400 State Street (413)787-2500	Chronic and Rehabilitation Leo A. Pettit, Jr., Director
STONEHAM	New England Memorial Hospital 5 Woodland Road 02180 665-1740	General with maternity Mr. E.L. Wall, Administrator
STOUGHTON	Goddard Memorial Hospital 905 Summer Street 02070 344-5100	General with maternity William B. Sheehan, Adm.
	New England Sinai Hospital 150 York Street 02072 344-0600	Chronic with rehabilitation David Kahn, Assistant to Pres.
TAUNTON	Morton Hospital 88 Washington Street 02780 824-6911	General with maternity Lawrence E. Ross, Administrator
WALTHAM	Middlesex County Hospital 775 Trapelo Road 02154 894-4600	Tuberc. and Chronic Disease George J. Karam, Acting Director
	David A. Stoneman Infirmary Brandies University South Street 02154 647-2407	College Infirmary Harris C. Faigel, M.D., Director
	E.K. Shriver Center for Mental Retardation, Inc. 200 Trapelo Road, 02154 893-3500	Special Hospital for the Mentally Handicapped with Assoc. Acute Care Donald E. McNamee, Administrator
	Waltham Hospital Hope Avenue 02154 899-3300	General with maternity Robert R. Lovejoy, President
WARE	Mary Lane Hospital 85 South Street 01082 967-6211(413)	General with maternity William Zwemke, Administrator
WAREHAM	Tobey Hospital, Inc. 43 High Street 02571 295-0880	General with maternity Warren E. Bishop, Administrator
WEBSTER	Hubbard Regional Hospital Thompson Road 01570 943-2600	General without maternity Bernard P. Gagnon, Administrator
WELLESLY	Dana Hall Infirmary 179 Grove Street 02181 235-0841	School Infirmary Theodore E. Spielberg, M.D. Adm.
	Simpson Infirmary Wellesly College 02181 235-0320	College Infirmary Thomas J. Keighley, M.D., Directo

WEST BOYLSTON	Worcester County Hospital Sanitorium Drive, 01606 852-1533	Chronic Disease Thomas C. Kim, M.D., Director
WESTFIELD	Noble Hospital 105 Silver Street 01085 485-1121	General without maternity George B. Brooks, Administrator
WEYMOUTH	South Shore Hospital 55 Fogg Road 02190 337-7011	General with maternity William Clark, Director
WHITINSVILLE	St. Camillus Hospital, Inc. Hill Street 01588 234-7306	Chronic Disease Rev. Vataliano Turci, Adminsitrato
WILLIAMSTOWN	Thompson Infirmary Williams College Park Street 02367 485-5015	College Infirmary Robert A. Goddell, Jr., M.D.
WINCHENDON	Winchendon Hospital High Street, 01457 297-2311	General without maternity Mrs. J. P. Martin, R.N., Adm.
WINCHESTER	Winchester Hospital 41 Highland Avenue 01890 729-9000	General with maternity Jack R. Hunter, Administrator
WINTHROP	Winthrop Community Hospital 40 Lincoln Street 02152 846-2600	General without maternity Mr. Gerard Nocton, Exec. Director
WOBURN	Choate Memorial Hospital 21 Warren St. 01801 933-6700	General without maternity Paul L. Downey, President
	New England Rehab. Hospital Rehabilitation Way 01801 935-5050	Rehabilitation Raymond J. Dunn, III, Adm.
WORCESTER	College of the Holy Cross Inf. College of the Holy Cross , 01601 793-2276	College Infirmary Rev. John E. Brooks, S.J.
	Doctors Hospital of Worcester 107 Lincoln Street 01605 799-0534	General without maternity David W. Hills, Administrator
	Fairlawn Hospital, Inc. 189 May Street 01602 791-6351	General without maternity Robert S. Schedin, President
	Marillac Manor 2 Granite Street 01604 789-8709	Institution for the care of Unwed Mothers Rev. Monsignor Leo J. Battista, Di
	The Memorial Hospital 119 Belmont Street 01605 793-6611	General with maternity David A. Barrett, Administrator

WORCESTER(cont'd)	ST. Vincent's Hospital 25 Queen Street 01610 798-1234	General with maternity Miss Helen Marie Smith
	Worcester City Hospital 26 Queen Street 01610 756-1551	General without maternity Paul Murphy, Superintendent
	Worcester Hahnemann Hospital 281 Lincoln Street 01615 757-7751	General with maternity Charles F. Stumpf, Director

TABLE BEDS,CENSUS DAYS,AVER CEN,UCC RATE FY78 - MED SURG

HSA	V1000		BEG MS	END MS	CDAYS MS	MEAN MS	ADC MEDSURG	UCC MEDSURG
1	2052	FAIRVIEW HOSPITAL	59	59	16925	59	46.4	78.6
1	2053	FARREN MEMORIAL HOSPITAL	88	88	16052	88	44.0	50.0
1	2061	NORTH ADAMS REG. HOSPITAL, INC	154	154	44673	154	122.4	79.5
1	2076	NOBLE HOSPITAL, INC.	124	124	36016	124	98.7	79.6
1	2120	FRANKLIN COUNTY PUBLIC HOSP	121	121	26129	121	71.6	59.2
1	2145	HOLYOKE HOSPITAL	268	268	76962	268	210.9	78.7
1	2148	MARY LANE HOSPITAL	66	66	16780	66	46.0	69.7
1	2149	MERCY HOSPITAL	219	223	70526	219	193.2	88.2
1	2153	PROVIDENCE HOSPITAL	202	202	56384	202	154.5	76.5
1	2155	COOLEY DICKINSON HOSPITAL	176	176	57391	176	157.2	89.3
1	2160	LUDLOW HOSPITAL SOCIETY	94	89	15355	92	42.1	45.7
1	2181	WING MEMORIAL HOSPITAL	49	49	14570	49	39.9	81.5
1	2226	ATHOL MEMORIAL HOSPITAL	88	88	17944	88	49.2	55.9
1	2231	HILLCREST HOSPITAL	128	124	32618	127	89.4	70.4
1	2313	BERKSHIRE MEDICAL CENTER	300	285	83294	289	228.2	79.0
1	2339	BAY STATE MEDICAL CENTER	707	652	213803	706	585.8	83.0
1			2843	2768	795422	2828	2179.2	77.1
2	2034	BURBANK HOSPITAL, INC.	155	157	49006	156	134.3	86.1
2	2036	HENRY HEYWOOD MEMORIAL HOSP.	102	102	30315	102	83.1	81.4
2	2077	WORCESTER HAHNEMANN HOSPITAL	165	165	50982	165	139.7	84.7
2	2098	FAIRLAWN HOSPITAL	99	99	28093	99	77.0	77.7
2	2105	MILFORD-WHITINSVILLE REG.HOSP.	118	118	37229	118	102.0	86.4
2	2119	HOLDEN DISTRICT HOSPITAL, INC.	65	65	17104	65	46.9	72.1
2	2124	MEMORIAL HOSPITAL	279	279	82766	279	226.8	81.3
2	2125	WORCESTER CITY HOSPITAL	283	283	84334	283	231.1	81.6
2	2126	CLINTON HOSPITAL	74	74	20605	74	56.5	76.3
2	2127	LEOMINSTER HOSPITAL	108	108	31891	108	87.4	80.9
2	2128	ST. VINCENT HOSPITAL	384	384	124485	384	341.1	88.8
2	2143	HARRINGTON MEMORIAL HOSPITAL	88	88	27174	88	74.4	84.6
2	2157	HUBBARD REGIONAL HOSPITAL	67	67	19449	67	53.3	79.5
2	2202	DOCTORS HOSP. OF WORCESTER INC	108	101	27012	108	74.0	68.5
2	2212	WINCHENDON HOSPITAL	40	25	4644	34	12.7	37.4
2	2298	NASHOBA COMMUNITY HOSPITAL	86	86	20747	86	56.8	66.1
2	2841	UNIVERSITY OF MASS. HOSPITAL	63	125	31046	95	85.1	89.5
2	2991	CUTLER ARMY HOSPITAL	65	65	15351	65	42.1	64.7
2			2349	2391	702233	2376	1923.9	81.0
3	2006	ANNA JAQUES HOSPITAL	76	76	26481	76	72.6	95.5
3	2029	ST. JOHN'S HOSPITAL	175	175	57417	175	157.3	89.9
3	2040	LOWELL GENERAL HOSPITAL	194	194	59237	194	162.3	83.7
3	2063	ST. JOSEPH'S HOSPITAL, INC.	218	218	58699	218	160.8	73.8
3	2078	AMESBURY HOSPITAL	55	55	15415	55	42.2	76.8
3	2099	LAWRENCE GENERAL HOSPITAL	295	295	102247	295	280.1	95.0
3	2131	HAVERHILL MUNICIPAL (HALE) HOS	142	142	47087	142	129.0	90.8
3	2225	BON SECOURS HOSPITAL, INC.	183	183	65276	183	178.8	97.7
3			1338	1338	431859	1338	1183.2	88.4

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HSA	V1000		BEG MS	END MS	CDAYS MS	MEAN MS	ADC MEDSURG	OCC MEDSURG
4	2001	SOMERVILLE HOSPITAL, INC.	130	130	39656	130	108.6	83.6
4	2003	CARNEY HOSPITAL	321	321	106344	321	291.4	90.8
4	2013	WINTHROP COMMUNITY HOSPITAL	65	65	20332	65	55.7	85.7
4	2014	EMERSON HOSPITAL	107	107	31770	107	87.0	81.3
4	2020	FRAMINGHAM UNION HOSPITAL, INC	190	204	62251	198	170.6	86.1
4	2031	BROOKLINE HOSPITAL	77	77	19849	77	54.4	70.6
4	2033	LAHEY CLINIC - BROOKS HOSP DIV	60	60	15578	60	42.7	71.1
4	2039	LEONARD MORSE HOSPITAL	187	187	56989	187	156.1	83.5
4	2043	HUNTINGTON GENERAL HOSPITAL	80	80	19456	80	53.3	66.6
4	2045	SYMMES HOSPITAL	124	123	38586	123	105.7	85.9
4	2048	FAULKNER HOSPITAL	218	218	75804	218	207.7	95.3
4	2054	GLOVER MEMORIAL HOSPITAL	82	90	24896	87	68.2	78.4
4	2057	PARKER HILL MEDICAL CENTER	88	88	19445	88	53.3	60.5
4	2059	NEW ENGLAND BAPTIST HOSPITAL	235	235	68436	235	187.5	79.8
4	2062	ROBERT B. BRIGHAM HOSPITAL	96	96	28205	96	77.3	80.5
4	2065	ST. MARGARET'S HOSP. FOR WOMEN	49	49	6444	49	17.7	36.0
4	2067	WALTHAM HOSPITAL	230	234	68414	234	187.4	80.1
4	2069	BETH ISRAEL HOSPITAL	313	333	106580	314	292.0	93.0
4	2071	MOUNT AUBURN HOSPITAL	234	234	71922	234	197.0	84.2
4	2075	NEWTON-WELLESLEY HOSPITAL	245	245	71791	245	196.7	80.3
4	2083	UNIVERSITY HOSPITAL	263	263	92168	263	252.5	96.0
4	2085	ST. ELIZABETH'S HOSPITAL, INC.	230	230	70110	230	192.1	83.5
4	2089	CHOATE MEMORIAL HOSPITAL	128	128	34886	128	95.6	74.7
4	2091	HAHNEMANN HOSPITAL	65	65	13991	65	38.3	59.0
4	2092	NEW ENGLAND DEACONESS HOSPITAL	370	370	128515	370	352.1	95.2
4	2094	WINCHESTER HOSPITAL	127	127	43447	127	119.0	93.7
4	2103	MARLBOROUGH HOSPITAL	99	99	25370	99	69.5	70.2
4	2107	SOUTH SHORE HOSPITAL	152	189	58469	176	160.2	91.0
4	2108	CAMBRIDGE HOSPITAL	118	108	33603	110	92.1	83.7
4	2114	NORWOOD HOSPITAL	186	190	61680	187	169.0	90.4
4	2119	CENTRAL HOSPITAL, INC.	90	90	12945	90	35.5	39.4
4	2129	LONGWOOD HOSPITAL	75	55	12391	68	33.9	49.9
4	2151	QUINCY CITY HOSPITAL	298	292	90153	295	247.0	83.7
4	2167	MASS. EYE AND EAR INFIRMARY	152	152	49891	152	136.7	89.9
4	2168	MASSACHUSETTS GENERAL HOSPITAL	860	860	285474	860	782.1	90.9
4	2170	PETER BENT BRIGHAM HOSPITAL	302	302	99577	301	272.8	90.6
4	2213	SANCTA MARIA HOSPITAL	141	141	39806	141	109.1	77.3
4	2227	MILTON HOSPITAL	153	153	42653	153	116.9	76.4
4	2235	GLOVER MANOR HOSPITAL	26	26	5113	26	14.0	53.9
4	2299	NEW ENGLAND MEDICAL CENTR HOSP	270	270	88781	270	243.2	90.1
4	2307	BOSTON CITY HOSPITAL	327	327	93772	327	256.9	78.6
4	2319	RAYMOND HOSP - WRENTHAM STATE	29	29	7981	29	21.9	75.4
4	2321	LEMUEL SHATTUCK HOSPITAL	250	250	68416	250	187.4	75.0
4	2323	PONDVILLE HOSPITAL	104	104	20679	104	56.7	54.5
4	2827	L.F. QUIGLEY MEM. HOSP AND ECF	69	80	18851	78	51.6	66.2
4	2900	BOSTON HOSPITAL FOR WOMEN	121	121	24237	121	66.4	54.9
4	2985	BOSTON VA HOSPITAL	602	602	175965	602	482.1	80.1
4	2988	WEST ROXBURY VA HOSPITAL	248	248	72474	248	198.6	80.1

TABLE BEDS,CENSUS DAYS,AVER CEN,OCC RATE FY78 - MED SURG

HSA V1000		BEG MS	END MS	CDAYS MS	MEAN MS	ADC MEDSURG	OCC MEDSURG
4 2989	U.S. PUBLIC HEALTH HOSPITAL	107	107	24225	107	66.4	62.0
4		9093	9154	2748571	9125	7529.8	82.5
5 2010	ST. LUKE'S HOSPITAL (NB)	362	362	121388	362	332.6	91.9
5 2011	ST. ANNE'S HOSPITAL, INC.	137	137	47870	137	131.2	95.7
5 2022	MORTON HOSPITAL	149	149	50349	149	137.9	92.6
5 2042	MARTHA'S VINEYARD HOSPITAL	29	29	7776	29	21.3	73.5
5 2044	NANTUCKET COTTAGE HOSPITAL	41	41	7911	36	21.7	60.2
5 2082	JORDAN HOSPITAL	99	99	32912	99	90.2	91.1
5 2086	ST. LUKE'S HOSPITAL-MIDDLEBORO	57	57	15060	57	41.3	72.4
5 2103	STURDY MEMORIAL HOSPITAL	161	161	48270	161	132.2	82.1
5 2101	GODDARD MEMORIAL HOSPITAL	184	184	59346	184	162.6	88.4
5 2106	TOBEY HOSPITAL, INC.	71	71	18323	71	50.2	70.7
5 2119	BROCKTON HOSPITAL	247	247	75801	247	207.7	84.1
5 2135	CAPE COD HOSPITAL, INC.	183	199	61842	189	169.4	89.6
5 2200	UNION HOSP. OF NEW BEDFORD	87	84	14988	86	41.1	47.7
5 2289	FALMOUTH HOSPITAL	64	64	21281	64	58.3	91.1
5 2311	CARDINAL CUSHING GENERAL HOSP.	212	212	72137	212	197.6	93.2
5 2337	UNION-TRUESDALE HOSPITAL, INC.	405	386	127632	397	349.7	88.1
5		2488	2482	782886	2480	2144.9	86.5
6 2004	MARY A. ALLEY HOSPITAL	41	41	9457	41	25.9	63.2
6 2007	BEVERLY HOSPITAL, INC.	185	185	50536	185	138.5	74.8
6 2008	UNION HOSPITAL (LYNN)	178	178	59592	178	163.3	91.7
6 2014	SALEM HOSPITAL	299	304	96951	304	265.6	87.4
6 2016	ADDISON GILBERT HOSPITAL	105	105	30404	105	83.3	79.3
6 2038	LAWRENCE MEM. HOSP. OF MEDFORD	167	167	52130	167	142.8	85.5
6 2041	MALDEN HOSPITAL	196	188	62026	192	169.9	88.5
6 2045	WHIDDEN MEMORIAL HOSPITAL, INC	154	154	48227	154	132.1	85.8
6 2058	MELROSE-WAKEFIELD HOSPITAL	168	168	55311	168	151.5	90.2
6 2160	NEW ENGLAND MEMORIAL HOSPITAL	209	209	65129	209	178.4	85.4
6 2073	LYNN HOSPITAL	228	232	80401	229	220.3	96.2
6 2088	BENJAMIN STICKNEY CABLE HOSP	37	37	5907	37	16.2	43.7
6 2093	HUNT MEMORIAL HOSPITAL	103	107	32395	104	88.8	85.3
6 2171	JOSIAH B. THOMAS HOSPITAL	91	91	28713	91	78.7	86.4
6		2161	2166	677179	2164	1855.3	85.7
TOTALS		20272	20299	6137950	20311	16816.3	82.8

TABLE BEDS,CENSUS DAYS,AVER CEN,OCC RATE FY78 - MED SURG ICU

HSA	V1000		BEG MS ICU	END MS ICU	CDAYS MS ICU	MEAN MS ICU	ADC MS ICU	OCC MS ICU
1	2053	FARREN MEMORIAL HOSPITAL	5	5	958	5	2.6	52.5
1	2061	NORTH ADAMS REG. HOSPITAL, INC	6	6	1285	6	3.5	58.7
1	2076	NOBLE HOSPITAL, INC.	6	6	1302	6	3.6	59.5
1	2120	FRANKLIN COUNTY PUBLIC HOSP	8	8	1620	8	4.4	55.5
1	2145	HOLYOKE HOSPITAL	13	13	2903	13	8.0	61.2
1	2149	MERCY HOSPITAL	21	21	4639	21	12.7	60.5
1	2150	PROVIDENCE HOSPITAL	6	6	1566	6	4.3	71.5
1	2155	COOLEY DICKINSON HOSPITAL	25	25	4162	25	11.4	45.6
1	2231	HILLCREST HOSPITAL	3	3	693	3	1.9	63.3
1	2313	BERKSHIRE MEDICAL CENTER	13	13	2407	13	6.6	50.7
1	2339	BAY STATE MEDICAL CENTER	33	33	6237	33	17.1	51.8
1			139	139	27772	139	76.1	54.7
2	2034	BURBANK HOSPITAL, INC.	16	16	3771	16	10.3	64.6
2	2036	HENRY HEYWOOD MEMORIAL HOSP.	7	7	2153	7	5.9	84.3
2	2077	WORCESTER HAHNEMANN HOSPITAL	11	11	2710	11	7.4	67.5
2	2098	FAIRLAWN HOSPITAL	2	2	0	2	.0	.0
2	2105	MILFORD-WHITINSVILLE REG.HOSP.	11	11	3773	11	10.3	94.0
2	2110	HOLDEN DISTRICT HOSPITAL, INC.	5	5	1155	5	3.2	63.3
2	2124	MEMORIAL HOSPITAL	17	14	3796	16	10.4	65.0
2	2125	WORCESTER CITY HOSPITAL	16	16	5235	16	14.3	89.6
2	2127	LEOMINSTER HOSPITAL	7	7	2098	7	5.7	82.1
2	2128	ST. VINCENT HOSPITAL	26	26	7480	26	20.5	78.8
2	2143	HARRINGTON MEMORIAL HOSPITAL	8	8	1813	8	5.0	62.1
2	2157	HUBBARD REGIONAL HOSPITAL	6	6	1642	6	4.5	75.0
2	2295	NASHOBA COMMUNITY HOSPITAL	4	4	1022	4	2.8	70.0
2	2841	UNIVERSITY OF MASS. HOSPITAL	8	16	2595	10	7.1	71.1
2			144	149	39243	145	107.5	74.1
3	2006	ANNA JAQUES HOSPITAL	8	8	2345	8	6.4	80.3
3	2029	ST. JOHN'S HOSPITAL	9	9	2675	9	7.3	81.4
3	2040	LOWELL GENERAL HOSPITAL	14	14	3339	14	9.1	65.3
3	2063	ST. JOSEPH'S HOSPITAL, INC.	8	8	2151	8	5.9	73.7
3	2078	AMESBURY HOSPITAL	4	4	1045	4	2.9	71.6
3	2099	LAWRENCE GENERAL HOSPITAL	9	9	2669	9	7.3	81.2
3	2131	HAVERHILL MUNICIPAL (HALE) HUS	10	10	3016	10	8.3	82.6
3	2225	BON SECOURS HOSPITAL, INC.	9	9	2714	9	7.4	82.6
3			71	71	19954	71	54.7	77.0
4	2001	SOMERVILLE HOSPITAL, INC.	8	8	2058	8	5.6	70.5
4	2003	CARNEY HOSPITAL	8	8	2199	8	6.0	75.3
4	2013	EMERSON HOSPITAL	8	8	1723	8	4.7	59.0
4	2020	FRAMINGHAM UNION HOSPITAL, INC	12	14	3008	13	8.2	63.4
4	2031	BROOKLINE HOSPITAL	7	7	788	7	2.2	30.8
4	2039	LEONARD MORSE HOSPITAL	10	10	2907	10	8.0	79.6
4	2045	SYMMES HOSPITAL	4	4	645	4	1.8	44.2

TABLE BEDS,CENSUS DAYS,AVER CEN OCC RATE FY78 - MED SURG ICU

HSA	V1000		BEG MS ICU	END MS ICU	CDAYS MS ICU	MEAN MS ICU	ADC MS ICU	OCC MS ICU
4	2048	FAULKNER HOSPITAL	5	10	4664	10	12.8	127.8
4	2054	GLOVER MEMORIAL HOSPITAL	6	7	1639	7	4.5	64.1
4	2057	PARKER HILL MEDICAL CENTER	5	5	893	5	2.4	48.9
4	2059	NEW ENGLAND BAPTIST HOSPITAL	10	10	1937	10	5.3	53.1
4	2067	WALTHAM HOSPITAL	10	10	2743	10	7.5	75.2
4	2069	BETH ISRAEL HOSPITAL	16	16	4442	16	12.2	76.1
4	2071	MOUNT AUBURN HOSPITAL	9	9	1696	9	4.6	51.6
4	2084	UNIVERSITY HOSPITAL	20	20	6567	20	18.0	90.0
4	2085	ST. ELIZABETH'S HOSPITAL, INC.	11	11	2401	11	6.6	59.8
4	2092	NEW ENGLAND DEACONESS HOSPITAL	14	14	4066	14	11.1	79.6
4	2094	WINCHESTER HOSPITAL	10	10	2737	10	7.5	75.0
4	2103	MARLBOROUGH HOSPITAL	6	6	1723	6	4.7	78.7
4	2107	SOUTH SHORE HOSPITAL	6	8	2252	7	6.2	88.1
4	2108	CAMBRIDGE HOSPITAL	8	8	2221	8	6.1	76.1
4	2114	NORWOOD HOSPITAL	10	10	2566	10	7.0	70.3
4	2119	CENTRAL HOSPITAL, INC.	4	4	808	4	2.2	55.3
4	2151	QUINCY CITY HOSPITAL	14	14	4560	14	12.5	89.2
4	2168	MASSACHUSETTS GENERAL HOSPITAL	40	40	11313	40	31.0	77.5
4	2170	PETER BENT BRIGHAM HOSPITAL	16	16	5374	16	14.7	92.0
4	2227	MILTON HOSPITAL	4	4	1081	4	3.0	74.0
4	2299	NEW ENGLAND MEDICAL CENTR HOSP	23	23	6899	23	18.9	82.2
4	2307	BOSTON CITY HOSPITAL	14	14	4109	14	11.3	80.4
4	2321	LEMUEL SHATTUCK HOSPITAL	6	6	1289	6	3.5	58.9
4	2827	L.F. QUIGLEY MEM. HOSP AND ECF	4	4	829	4	2.3	56.8
4	2985	BOSTON VA HOSPITAL	16	16	3659	16	10.0	62.7
4	2988	WEST ROXBURY VA HOSPITAL	11	11	0	11	.0	.0
4	2989	U.S. PUBLIC HEALTH HOSPITAL	3	3	0	3	.0	.0
4			358	368	95796	366	262.5	71.7
5	2010	ST. LUKE'S HOSPITAL (NB)	12	12	3613	12	9.9	82.5
5	2011	ST. ANNE'S HOSPITAL, INC.	12	12	3560	12	9.8	81.3
5	2022	MORTON HOSPITAL	8	8	2309	8	6.3	79.1
5	2042	MARTHA'S VINEYARD HOSPITAL	4	4	660	4	1.8	45.2
5	2044	NANTUCKET COTTAGE HOSPITAL	2	2	195	2	.5	26.7
5	2082	JORDAN HOSPITAL	6	6	1482	6	4.1	67.7
5	2086	ST. LUKE'S HOSPITAL-MIDDLEBORO	5	5	1174	5	3.2	64.3
5	2100	STURDY MEMORIAL HOSPITAL	11	11	2993	11	8.2	74.5
5	2101	GODDARD MEMORIAL HOSPITAL	10	10	2959	10	8.1	81.1
5	2105	TOBEY HOSPITAL, INC.	4	4	1954	4	5.4	133.8
5	2118	BROCKTON HOSPITAL	16	16	4301	16	11.8	73.6
5	2135	CAPE COD HOSPITAL, INC.	13	13	4128	13	11.3	87.0
5	2250	UNION HOSP. OF NEW BEDFORD	5	5	1036	5	2.8	56.8
5	2289	FALMOUTH HOSPITAL	7	7	1811	7	5.0	70.9
5	2311	CARDINAL CUSHING GENERAL HOSP.	16	16	4962	16	13.6	85.0
5	2337	UNION-TRUESDALE HOSPITAL, INC.	19	19	5214	19	14.3	75.2
5			150	150	42351	150	116.0	77.4
6	2007	BEVERLY HOSPITAL, INC.	11	11	2261	11	6.2	56.3
6	2008	UNION HOSPITAL (LYNN)	8	8	2293	8	6.3	78.5

TABLE BEDS,CENSUS DAYS,AVER CEN,OCC RATE FY78 - MED SURG ICU

HSA V1000			BEG MS ICU	END MS ICU	CDAYS MS ICU	MEAN MS ICU	ADC MS ICU	OCC MS ICU
6	2014	SALEM HOSPITAL	16	16	4352	16	11.9	74.5
6	2016	ADDISON GILBERT HOSPITAL	4	4	953	4	2.6	65.3
6	2038	LAWRENCE MEM. HOSP. OF MEDFORD	6	6	3481	6	9.5	158.9
6	2041	MALDEN HOSPITAL	8	8	2250	8	6.2	77.1
6	2046	WHIDDEN MEMORIAL HOSPITAL, INC	9	9	2312	9	6.3	70.4
6	2058	MELROSE-WAKEFIELD HOSPITAL	12	12	4099	12	11.2	93.6
6	2060	NEW ENGLAND MEMORIAL HOSPITAL	10	10	2289	10	6.3	62.7
6	2073	LYNN HOSPITAL	7	7	2181	7	6.0	85.4
6	2093	HUNT MEMORIAL HOSPITAL	8	8	2107	8	5.8	72.2
6	2171	JOSIAH H. THOMAS HOSPITAL	8	8	2246	8	6.2	76.9
6			107	107	30824	107	84.4	78.9
TOTALS			969	984	255940	978	701.2	71.7

ATTACHMENT B.10-5

[RESERVED]